THE

VETERINARY JOURNAL

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Editorial.

THE PREVENTION OF CORRUPTION.

ON another page we print the principal portion of a Bill at present before Parliament, the object of which is "the better prevention of corruption," and we direct our readers' attention to this document as one which intimately concerns their welfare. The measure has been eagerly discussed by the medical press, and physicians and surgeons hopefully regard it as a piece of legislation which, when it obtains the sanction of Parliament, will mitigate some of the evils to which they are subjected. Veterinary surgeons are in their own way quite as much harassed by the importunities of greedy and impudent people as their medical brethren are, and they must therefore do all they can to support the Bill. We are not of that optimistic class who think that virtue and wisdom can be conferred as precious gifts by legislation, but we do welcome any efforts to strengthen the resolves of honest men and to smooth the paths of the just. This Bill will not abolish corruption or bribery, but it will help to make these things more disreputable by making them distinctly illegal, and it will furnish a ready answer for us to give to dishonest agents who would be inaccessible to logical and still less to ethical considerations.

The essence of the Bill, of course, lies in the word "corruptly," and we foresee that the definition of this word, or its applicability in the particular case which may come before the Court, will be the cause of much debate and give rise to much legal sophistry. We can imagine the acrimonious wranglings and the exhibitions of forensic subtleties to which it is certain to give rise. There will be continual attempts by the avaricious and dishonest at evasion ; there will be the usual appeal to use and wont, as if the mere existence of a custom were its justification ; there will be the veiled or open threat, and, worst of all, there will be foolish collusion between employer and employed, between master and man. Let us in passing mention a case in illustration of the last point which came lately under our own notice and for which we can vouch. A coachman went to his employer, a wealthy man, and told him that he must resign his post as he was racked with rheumatism and lum-

bago, and was no longer fit for the work and the exposure which it entailed. But he hoped his employer would not cast him utterly aside at his advanced age, but would assign to him a little cottage on the estate and grant him a small pension. The employer's answer was as foolish as it was harsh. "No, John, I will not give you a pension. You know I have never grumbled at your accounts; you have been allowed all along to pay these accounts yourself—the corn merchant's, the coach-builder's, the saddler's, and the veterinary surgeon's—and if you have not made enough in the way of discounts to provide yourself with a pension you are not worth pensioning." Here the euphemistic phrase used was "discounts," probably the correct word would have been "blackmail." Now the Bill before Parliament aims at the abolition of blackmail because it makes illegal and punishable with fine and imprisonment the corrupt giving or corrupt accepting of any gift as an inducement to do or forbear to do any act in relation to a principal's (which includes an employer's) business. Here then is a law which brings relief to us all. It does not interfere in any way with our generous impulses; we may still give the groom a tip when he drives us to the station or carries a heavy box for us, because in such cases he is, if you like, declaredly and before the eyes of his employer acting as our temporary coachman or porter. Even further services may be accepted and paid for without any taint of corruption. Let us take an illustrative case. A veterinary surgeon is called to a client's house five or six miles from the town in which he practises. The case is not a serious one but requires careful and frequent attention—is in fact one which demands rather skilful nursing than drastic treatment. What is the surgeon to do? The duties are too trivial to justify a continuous stay, even if his other work permitted it; he has no assistant to send in his place, and would not send him if he had; there is no Institute of Veterinary Nurses; the only plan is to ask the coachman to undertake the work of a nurse, and to pay him for it as for work done in his own time and outside of his regular sphere of duty. No employer could possibly object to such an arrangement, but would rather approve of it, as it is the means of hastening the cure of the sick animal and so increasing its utility. Besides, the coachman is gratified by being allowed to add to his wages honestly. The surgeon's time is saved and his income therefore increased by this plan of employing unskilled though intelligent and conscientious nurses. The whole case would be vitiated if the surgeon gave a bribe to the groom on the understanding that he should give an over-dose or under-dose of the medicine, or if the groom forced a bribe out of the surgeon by threatening to delay the animal's recovery or make factitious complaint to his master. The new Bill would make such conduct very dangerous; it would equally make the position of the honourable veterinary surgeon—and we are all honourable men—almost impregnable. But there is need for concerted action if the Bill,

when it becomes law, is not to be a dead letter. The Government and the Law Courts must be supported, and there must be no wavering and no weakness on our part. An opportunity is presented of getting rid of a horrible burden and removing unpleasant and degrading suspicion; we must avail ourselves of it.

It will be noticed that the Bill aims very properly at the abolition of a very subtle form of corruption in its third clause: "If any person knowingly gives to any agent any receipt, account, or other document in respect of which the principal is interested, and which contains any statement which is false or erroneous or defective in any important particular, and which to his knowledge is intended to mislead the principal, he shall be guilty of a misdemeanour," &c. &c. This refers to another department of abuse under which we have all suffered—the unsatisfactory matter of discounts. Some employers, as we have seen, openly or by connivance encourage their servants to demand discount, vainly imagining that it comes out of the veterinary surgeon's pocket. They fail to see that there is a fair standard of price below which no respectable surgeon will go; if, therefore, he is expected to deduct 5 per cent. of discount, he must first add it to his charge, openly or covertly, and this he thinks hardly honest. Other employers may see quite clearly that the discount really comes out of their own pocket, but submit to it as a matter of calculation, knowing that it gratifies the coachman to be paid in this way. We are very doubtful of the value of such a course of conduct, even when viewed from the point of view of pure economics. But the Bill takes into its purview not only receipts but accounts, which contain statements which are false or erroneous, and intended to mislead the principal. What veterinary surgeon does not know of the visits which the coachman of a rich client pays him from time to time, ostensibly for the purpose of informing him that the horses of his master are suffering from some petty ailment, which does not require the attendance of the surgeon, but which does necessitate the administration of a simple aperient? This means the preparation of a packet or bottle containing inexpensive drugs, for which, however, the surgeon has to charge a fairly heavy price, as the preparation of medicines forms no unimportant part of his income. If the horses were really to benefit by the medicine no one would be a penny the worse, but the unpleasant suspicion must cross the mind of the surgeon that the visit of the coachman is a quite unnecessary one, that the horses will not touch a drop of the medicine—being in the best of health—but that the coachman will quietly pour it down the drain. The whole scheme is one for the enrichment of a servant at the expense of his employer, for the coachman expects a substantial gratuity from the surgeon, and can almost compel the donation; the surgeon feels himself dragged into a horrible conspiracy, and yet dare not murmur, as any remonstrance or objection would be met with a protest on the part

of the "virtuous" servant, who would solemnly declare he was serving his master's best interests—as, of course, might in the particular instance actually be the case—and would assume an attitude of injured innocence and outraged honour. The most efficient way of abolishing such an abuse would be to institute a system of invoices, and make a point of sending one with every box or bottle of drugs supplied. Here again co-operation amongst veterinary surgeons would be necessary, as the system of sending invoices must be universal and compulsory if it is to be efficacious, but perhaps the Royal College might in this case supplement the work of the Legislature by a short bye-law. One would expect the help of employers also in our efforts to protect their pockets, but then so many employers are indolent and foolish, and, in such matters, actually cowardly.

Our medical brethren are greatly harassed by touting tradesmen of all kinds, and occasionally find themselves the recipients of gifts from traders of whom they have scarcely heard, through the mere fact of having recommended a particular kind of food or drug or appliance. This kind of gratitude is only, of course, a lively appreciation of favours to come, and is extremely offensive. Our temptations are not quite the same as those which beset medical men, but they are just as disagreeable. Take the horse-dealer alone. What visions of dishonesty does the word not conjure up! Yet the horse-dealer is just the kind of man whose machinations the present Bill is intended to defeat. A false certificate of soundness is a document which "to his [the veterinary surgeon's] knowledge is intended to deceive the principal," and the person who gives it "shall be guilty of a misdemeanour, and liable . . . to imprisonment." This, of course, has no terrors for us, but must be regarded, as we have already said, as a purely protective regulation. We trust that the profession will stiffen its back, and by a united and determined effort bid defiance to all the corrupt forces of the world.

Royal College of Veterinary Surgeons.

NEW VETERINARY COLLEGE.

AT a meeting of the Examining Board of the above body held in Edinburgh, consisting of Messrs. W. Woods, F.R.C.V.S.; J. Clark, F.R.C.V.S.; W. Hunting, F.R.C.V.S.; W. H. Bloye, F.R.C.V.S.; N. Almond, F.R.C.V.S.; Vet.-Lieut.-Colonel J. A. Nunn, D.S.O., C.I.E., F.R.C.V.S., F.R.G.S., F.R.S.E.; R. J. Hickes, F.R.C.V.S.; J. Blakeway, F.R.C.V.S.; H. J. Dawes, F.R.C.V.S.; A. Wheatley, F.R.C.V.S.; W. Robb, F.R.C.V.S.; W. F. Peacock, M.D., F.R.C.V.S., M.R.C.S., L.R.C.P.; E. Wallis Hoare, F.R.C.V.S.; F. T. G. Hobday, F.R.C.V.S.; R. F. C. Leith, M.B., F.R.C.P.E.; George Dean, M.B.; J. B. Haycraft, M.D., D.Sc., F.R.S.E.; T. H. Milroy, M.D., B.Sc., F.R.S.E.; J. Reynolds Green, D.Sc., M.A.,

F.L.S.; H. Somerville, B.Sc. Lond.; J. M. H. Munro, D.Sc., M.R.C.S., L.R.C.P.; and J. R. Ainsworth Davis, M.A., F.C.P., F.Z.S.

The following candidates passed:—

Class "A"—Messrs. O. Carlyle, G. Gordon, E. Greenway, G. M. Hallen, J. F. M'Donald, J. H. Primmer, J. Smith, J. Taylor, P. Thexton.*

Class "B"—Messrs. R. C. Allinson,* R. F. Bett, W. Catterall, J. Sheffield, C. Taylor.

Class "C," Four Years—Messrs. J. Aitken, H. E. Cross,* J. B. Chadwick, E. E. Elphick, J. A. Fearnside, S. H. Gaiger,* E. W. Nickson, P. Reilly, K. P. Rankin, S. Robson, H. A. Turner, and A. Whitehead.

Class "D" and obtained their Diplomas—Messrs. Stanley Elley, Stafford; W. Hepburn, Coldstream; C. H. Wadlow, Shifnal.

* Second Honours.

GLASGOW VETERINARY COLLEGE.

Class "A"—Messrs. A. M'Cunn, J. H. Thomson, W. T. Lindsay,* A. C. Perkins, W. W. Reid, H. H. Brodie, V. M'Leish, R. Dickie, and D. B. Rodgers.

Class "B"—Messrs. W. Anderson, A. Douglas, J. Hill, and G. M'Call.

Class "C"—Messrs. W. W. Campbell, W. P. Begg, J. B. Thom, D. M'Leod, J. Spruel.

Class "D" and obtained their Diplomas—Messrs. J. S. S. Woodrow, Dennistoun; J. F. Rankin, Hamilton.

* Second Honours.

New Veterinary College, Edinburgh.

PRIZE LIST, 1902-3.

PRINCIPAL'S £20 PRIZE, *Gold Medal*—Mr. W. Hepburn.

AN OLD STUDENT'S £25 PRIZE—Mr. W. Hepburn.

MEDICINE—

Highland and Agricultural Society's Silver Medal—Mr. W. Hepburn.

1st Class Certificates—Messrs. W. Hepburn, Stanley Elley, C. H. Wadlow.

2nd Class Certificate—Mr. J. C. Smith.

SURGERY—

Highland and Agricultural Society's Silver Medal—Mr. Stanley Elley.

1st Class Certificates—Messrs. Stanley Elley, W. Hepburn, C. H. Wadlow, J. C. Smith.

2nd Class Certificate—Mr. R. M. Jones.

MEAT INSPECTION—
Two Medals—Messrs. W. Hepburn, C. H. Wadlow.
1st Class Certificates—Messrs. W. Hepburn, C. H. Wadlow, S. Elley, J. C. Smith, R. M. Jones, S. Robson, P. Reilly.

HYGIENE—
Highland and Agricultural Society's Silver Medal—Mr. H. E. Cross.
1st Class Certificates—Messrs. H. E. Cross, S. H. Gaiger, J. B. Chadwick, J. Aitken, H. A. Turner, K. P. Rankin, E. E. Elphick.
2nd Class Certificate—Mr. S. Robson.

GENERAL PATHOLOGY AND PATHOLOGICAL ANATOMY—
Highland and Agricultural Society's Silver Medal—Messrs. J. B. Chadwick, S. H. Gaiger, H. A. Turner.
1st Class Certificates—Messrs. J. B. Chadwick, S. H. Gaiger, H. A. Turner, E. E. Elphick, H. E. Cross, J. Aitken, K. P. Rankin, P. Reilly.
2nd Class Certificate—Mr. S. Robson.

MATERIA MEDICA—
Highland and Agricultural Society's Silver Medal—Mr. S. H. Gaiger.
1st Class Certificates—Messrs. S. H. Gaiger, E. E. Elphick, H. E. Cross, H. A. Turner, J. B. Chadwick, K. P. Rankin, J. Aitken, S. Robson.

SENIOR ANATOMY—
Highland and Agricultural Society's Silver Medal—Mr. R. C. Allinson.
1st Class Certificates—Messrs. R. C. Allinson, R. F. Bett, J. Sheffield, H. R. Laycock, C. Taylor, W. Catterall.

PHYSIOLOGY—
Highland and Agricultural Society's Silver Medal—Mr. J. Sheffield.
1st Class Certificates—Messrs. J. Sheffield, R. C. Allinson, H. R. Laycock.
2nd Class Certificates—Messrs. W. Catterall, R. J. Bett, C. Taylor.

STABLE MANAGEMENT—
Highland and Agricultural Society's Silver Medal—Mr. J. Sheffield.

PRACTICAL ANATOMY—
Silver Medal—Mr. W. Catterall.

HISTOLOGY—
Bronze Medal—Mr. W. Catterall.

JUNIOR ANATOMY—
Highland and Agricultural Society's Silver Medal—Mr. George Gordon.
1st Class Certificates—Messrs. G. Gordon, John Smith, J. F. Macdonald, E. Greenway, J. Hope Primmer, J. Taylor, P. Thexton.
2nd Class Certificate—Mr. J. C. Storie.

CHEMISTRY—
Highland and Agricultural Society's Silver Medal—J. Hope Primmer.
1st Class Certificates—Messrs. J. Hope Primmer, O. Carlyle, F. Macdonald, J. Smith, P. Thexton, W. P. Ruthven.
2nd Class Certificates—Messrs. E. Greenway, J. C. Storie, G. M. Hallen.

BIOLOGY—
Highland and Agricultural Society's Silver Medal—Mr. John Taylor.
1st Class Certificates—Messrs. John Taylor, John Smith, P. Thexton, O. Carlyle.
2nd Class Certificates—Messrs. G. Gordon, J. F. Macdonald, E. Greenway.

PHYSICS—
Bronze Medal—Mr. P. Thexton.
1st Class Certificates—Messrs. P. Thexton, John Smith.

CURATOR OF MUSEUM—
Bronze Medal—Mr. S. H. Gaiger.

DEMONSTRATOR OF ANATOMY—
Two Bronze Medals—Messrs. H. E. Cross, J. B. Chadwick.

EDINBURGH VETERINARY MEDICAL SOCIETY'S SILVER MEDALS—
(1.) *President's for Special "Essay"*—Mr. J. C. Smith.
(2.) *Best General "Essay"*—Mr. J. C. Smith.
1st Prize Certificates—Messrs. J. C. Smith, J. A. Shaw.
(3.) *"Best Communication"*—Mr. A. B. Mattinson.
1st Prize Certificates—Messrs. J. C. Smith, G. H. Nicholson.

Original Papers.

SUPPURATIVE OR EPIZOOTIC LYMPHANGITIS.

BY E. E. MARTIN, VET.-CAPTAIN, ARMY VETERINARY SCHOOL, ALDERSHOT.

WHEN a large number of horses were, at the conclusion of the war, brought back from South Africa, it was only to be expected that some of these would introduce into this country diseases that were not generally met with here. I was not altogether surprised therefore on finding about the middle of September in the remount stable of the Army Service Corps a horse that had landed from South Africa early in August, with a suspicious hind leg. The leg from the lower third of the tibia downwards was enlarged, and the lymphatics on the inside of the leg were corded. I took him into hospital, putting him into a stable by himself, and tested him with mallein —reaction *nil.*

Two or three days after admittance to hospital buds or small abscesses appeared on the corded lymphatics. These abscesses quickly burst, forming sores on the leg, quite indistinguishable macroscopically from farcy sores. Having had some experience with suppurative lymphangitis in India, I suspected this case, and made several microscopical examinations of the discharge without finding anything definite. As I was leaving the the station for some time I had to hand over my work to Veterinary-Major Butler and I called attention to this case. A few days after my departure he found the organism, and as this was the first case that had appeared in the service in England it was considered advisable to stamp it out—so the animal was destroyed. Veterinary-Major Butler informed me afterwards that on post-mortem examination he found the organism in great abundance

in the yellow jelly-like exudate that occurred in the course of the lymphatics up the leg.

This case was admitted to hospital on the 19th September, and was destroyed on the 4th October.

On the 19th January a bay mare that had been admitted to hospital a fortnight previously with a sprained tendon on the near fore, was found to have a swelling of the near hind leg just above the hock. Three small swellings which appeared to be abscesses on the point of bursting were seen, and a large hard swelling the size of a hen's egg was found in the groin.

I at once had her moved to a shed in a field about 200 yards from any other horses or stables, and opened one of the small abscesses and examined the discharge microscopically. I found the organism in abundance.

I reported the case and tested her with mallein—reaction *nil.* A board of veterinary officers was assembled to consider the case, and I asked to be allowed to treat her as she was a fine animal in the prime of life, and I felt it possible to isolate her with a minimum of risk to other horses. The Principal Veterinary Officer having consented I proceeded to treat her. Treatment was as follows:—All the abscesses, including the one in the groin, were opened with the knife, the contents evacuated, and the walls thoroughly burnt with the actual cautery. Internal treatment in the shape of half an ounce of iodide of potassium given twice daily in the feed was carried out. All the abscesses treated in this way did very well, with one exception, and this was one that was situated just on the part where the tibia is subcutaneous, and I think I must have cauterised the periosteum severely, for the part sloughed badly. I feel sure that the long time this abscess took to heal was more due to this than to the actual disease. She was discharged for duty on the 15th April, having been altogether three months under treatment. All the time she was under treatment she was kept in the shed above mentioned, and was neither groomed nor touched in any way except to be fed.

Feeding was always done by one man, who had nothing to do with any other animals.

I cannot help thinking that the favourable result in this case was due a good deal to the internal treatment of iodide of potassium.

The previous history of this case is somewhat interesting. She was an English mare, and had been in the corps at Aldershot for over two years. On looking up her veterinary history sheet I found she had been in hospital for ten days in September, suffering from a contused wound. At the same time that the first case was in hospital, I neither remember nor could I find out in what position her wound was, nor anything further about it, but the entry is there on the history sheet. The first horse was kept in a stable by himself, but I think there is little doubt that she must have caught the disease from him, probably on some of the grooming kit.

The incubation period (about four months) is very much what one would expect in this affection. It indicates that my isolation measures in the first case were far from perfect, and also shows the highly contagious nature of the disease.

As the diagnosis is a matter of great importance, a few remarks on the bacteriology of the disease may not be out of place. The casual organism is an ovoid cryptococcus, with somewhat pointed ends; it has been likened in shape to a melon-seed. It has a double contour, which is clearly defined and is highly refractile.

Its classification is still under dispute; some authorities consider it belongs to the group of Protozoa, sub-order Coccidia, others to the yeast group. In all probability it belongs to the latter, and may be classed among the Saccharomyces,

The demonstration of the organism for diagnostic purposes is fairly easy. A little pus is taken from a *newly-opened* abscess and placed on a cover-glass, which is then placed face downwards on a slide and pressed out until it becomes a very thin film. It is then examined ander a one-sixth inch objective, or better still, if one is available, a one-twelfth oil of immersion lens. If the disease be epizootic lymphangitis numbers of bodies of the above description will be seen lying free in the pus or encapsuled in the cells.

It stains with difficulty, and the same remark may be applied to its artificial cultivation. Several observers claim to have cultivated it, but this requires confirmation.

INFECTIOUS PNEUMONIA OF CALVES.

BY HENRY TAYLOR, M.R.C.V.S., NEW VETERINARY COLLEGE, EDINBURGH.

We have lately received from Mr. T. C. Howatson, of St. Asaph, North Wales, a piece of lung from a five months old calf, one of four which died from a disease evidently of a contagious character within a week in the same herd. Mr. Howatson gives the following particulars of the outbreak: —The symptoms shown in all the cases are—much grunting, hurried breathing, continual lying down, very weak pulse, about 120 per minute, temperature 98° to 100° Fahr.; normal lung sounds on auscultating superior half of chest; pneumonia sounds inferior half of chest. Death occurs in from twelve to twenty-four hours, the animals becoming paralysed two or three hours after the first signs of the disease are manifested.

Post-mortem.—Slight peritonitis and slightly inflamed rumen, gall bladder distended; kidneys healthy when cut into, but having a bluish-purple colour on infero-external surface; lungs inflamed in lower portions, much jelly-like exudate in pleural cavity, also a slight quantity in abdominal cavity.

The piece sent was part of one of the inferior lobes; the pleuro covering it was rough and in places covered by a fibrinous exudate, the lung substance itself being more solid to the touch than normal. On section, the more dependent parts of the lung were hepatised, and pieces cut out sank in water. The colour of the section was dark red, which brightened on exposure to air. The interlobular septa were well marked, being mapped out in dark red lines; here and there there were small punctiform hæmorrhages. Other parts of the lung were not so resilient as the foregoing, and looked fairly normal except for the septa; here, on section, the most noticeable feature was the distention of the septa with blood, or, at any rate, a reddish coagulated fluid; as the lung tissue enclosed by these septa seemed almost normal to the naked eye, the whole presented a mosaic appearance. In the course of the distended septa there were numerous dark red ecchymoses.

Judging from the above we should say that the disease extended by the lymphatics, and that the distention of the interlobular septa enclosing

almost normal lung tissue represented an earlier phase of the disease than when the lung tissue became hepatised. In this respect the disease presents a good deal of analogy to pleuro-pneumonia contagiosa of the ox.

Microscopic Appearance.—Under the microscope the most striking change was that affecting the interlobular septa. These were thickened and distended by the filling of the lymph spaces with an exudate containing large numbers of red blood corpuscles. In some places these spaces appeared to be filled with blood only, and in the preparing of the specimen the masses of blood filling these spaces were very apt to fall out. If several contiguous spaces were thus deprived of their contents, the appearance presented a netlike arrangement with more or less wide meshes. Not only were the interlobular lymphatics distended but also the peribronchial and perivascular lymph spaces, and with a like exudate containing blood-cells. A section taken from the hepatised part of the lung showed the capillaries of the alveolar walls to be very much swollen and filled with blood, and the epithelium lining the alveoli to be here and there proliferating. Sections from the less dense portions of the lung exhibited in some places slight bronchitis with congested blood-vessels in the peribronchial tissue, congested alveolar capillaries (but not to such an extent as in the hepatised portions of the lung), and catarrh of the cells lining the alveoli. In addition there was pleurisy.

This disease is described in the latest edition of *Les Maladies microbiennes des Animaux*, by Nocard and Leclainche, under the heading of "Septic Pleuro-Pneumonia of Calves." It is there classed as one of the hæmorrhagic septicæmias, and is described as one of the forms of pasteurellosis of the bovines. The group of diseases which are said to be due to organisms of the pasteurella type include, in addition to fowl cholera (which was the first disease of this group in which the organism was thoroughly studied, and for this reason we often speak of this family of organisms as being of the fowl-cholera type), one or more diseases for each of our domestic animals—for example, pasteurellosis of the horse in equine contagious pleuro-pneumonia. Pasteurellosis of the dog occurs in two forms—(*a*) distemper, (*b*) epizootic gastritis.

Speaking of pasteurellosis of the ox, these authors say that the pasteurella determine in that animal different infections, viewed from their clinical or pathological expression, and that it appears impossible to them to place together under the one description evolutions of the disease so dissimilar as pneumo-enteritis (hæmorrhagic septicæmia or Rinderseuche), which is a very acute form, and entéqué, a chronic form.

Accordingly they classify them as follows:—

(*a*) Hæmorrhagic septicæmia of the ox (pneumo-enteritis or Rinderseuche.
(*b*) Septic pleuro-pneumonia of calves.
(*c*) White scour.
(*d*) Entéqué, seen in the Argentine Republic.

REPORT OF AN INVESTIGATION INTO THE RELATIONSHIP OF HUMAN TUBERCULOSIS TO THAT OF BOVINES.

BY DAVID J. HAMILTON, M.B., F.R.S.C.E., PROFESSOR OF PATHOLOGY, AND J. M'LAUCHLAN YOUNG, F.R.C.V.S., F.R.S.E., LECTURER ON VETERINARY HYGEINE.

THE above Report is of great interest, and shows signs of great care taken in the investigations.

The investigators have come to the following conclusions :—

1. That, although human tubercle is probably not so virulent for the calf as that derived from bovines, yet it can be readily inoculated upon that animal.

2. That this holds good whether the tubercle inoculated be derived from tubercular lymph-glands, tubercular lung, tubercular sputum, or tubercular urine.

3. That it produces this positive result irrespective of whether it be introduced by feeding the animal with the tubercular material, by subcutaneous inoculation upon a peripheral part, by respiring a spray containing the bacillus, or by injection into the venous system.

4. That the organs most affected are those in immediate connection with the part operated upon.

5. That the lymphatic system is constantly involved in the resulting tuberculosis.

6. That when administered by the mouth, tubercular sputum induces an abdominal lymph-gland tuberculosis without necessarily the intestine being in any way involved.

7. That when tuberculosis from a human source has been engrafted upon a calf, it gains enormously in virulence by being reinoculated upon a second calf.

8. That the morphological characters of the bacillus may vary according to circumstances, and are no guide to the source of the organism under observation.

9. That the above facts go to favour the view that the human bacillus and that of bovines are identical, but modified somewhat by their environment.

10. That our results are a direct contradiction of those alleged to have been obtained by Koch and Schütz.

UNIQUE CASES.

THESE photographs have been kindly sent to the *Veterinary Journal* by Vet.-Captain R. H. Holmes, A.V.D.

No. 1 is probably unique in its way. It is a snap-shot of a horse being shot, taken at the moment the rifle was fired. It will be noticed that the hind limbs are flexed and lifted off the ground, almost as if the animal was in the first act of kicking, and that the fore are straight, the weight of the body being supported by them. This is contrary to the general idea that when shot the fore limbs double up and the animal pitches on to his head. The white mark behind the horse is a heap of stones some distance away.

No. 2 is the head of a Beloochi mare, and shows the way the tips of

the ears curve inwards, which is a distinctive characteristic of this breed. Beluchistan is that country on the north-west frontier of India extending from the sea-coast northwards to the Punjab.

Clinical Papers.

A CASE OF DISEASE OF THE AURICULO-VENTRICULAR VALVES, WITH INCOMPETENCY.

BY HENRY TAYLOR, M.R.C.V.S., NEW VETERINARY COLLEGE.

THE subject was a collie dog twelve or thirteen years old. He had been for a long time in the possession of the owner, who informed us that he had been lately showing signs of failing appetite, weakness, and lassitude, and also that he had had one or two fainting fits. He was admitted to the College on 22nd March.

Symptoms.—The animal was dejected, and had a haggard expression. The respirations were increased, and the slightest exertion caused a further quickening of them. The mouth had a disagreeable odour, and the mucous membranes were jaundiced. The dog vomited occasionally, and sometimes the vomited matter was mixed with blood. The pulse was weak, quick, irregular, and intermittent. The heart was palpitating, and the impulse against the chest wall was strong, almost shaking the animal. The beating could be plainly *felt* on both sides of the chest. There was not much room for doubt that the patient was suffering from some heart trouble, but to definitely locate the lesion was not so easy a matter.

Diagnosis.—The diagnosis of the exact condition of affairs was rather difficult. The cardiac impulse was sharp and tumultuous, and could be felt over a large extent of surface of both right and left sides of the chest. The apex beats varied considerably in numbers, and were very irregular both as regards the intervals and the impact with which they struck the chest wall. In number they varied between 160 and 180 per minute, and occasionally for a brief interval they were so fast that it was impossible to count them. Only one sound could be heard on auscultation; though I listened carefully and long, I could not say I heard any more. The one sound which I could hear was loud, and *seemed* to coincide with the apex beat. No blowing sounds or bruits or murmurs could be distinguished, though from what was revealed on post-mortem examination I suppose we ought to have heard a murmur during systole. Perhaps this is not to be wondered at when we think that the murmur would have had to be almost synchronous with loud metallic sounds which were at the rate of three per second.

Percussion over the heart region revealed the heart a little enlarged. The pulse was extremely weak, of low tension, irregular, and intermittent, and varied in number from 72 to 88 per minute. Thus every cardiac systole did not account for a pulse wave.

To sum up, then: here we have a case of heart disease in which only one sound can be made out; and in which there are no bruits. The cardiac lesions we may deduct from the above are many. Truly the diagnosis of heart disease amongst our patients presents difficulties. In reality it was more the attendant symptoms on the heart trouble which

No. 1.

No. 2.

PHOTOGRAPHS OF UNIQUE CASES. (Page 311.)

helped us to arrive at a diagnosis than the true heart symptoms. The attendant symptoms were (1) dyspnœa, with accentuation of the second pulmonary sound, very clearly heard when the dog was on his side; (2) marked evidence of venous stasis, as seen in the dropsy of the abdomen and the gastric catarrh.

These symptoms pointed, of course, to mitral incompetency, but still left us in the dark as to whether this condition arose from changes in the segments, with contraction and shortening due to the shrinking of cicatricial tissue after endocarditis, or from dilation of the heart leading to the non-coaptation of the segments. There our diagnosis rested. As will be seen later, the tricuspid lesions were not diagnosed.

Prognosis was unfavourable, but the owner wished us to try our best.

Treatment consisted in the administration of digitalis. When given in watery solution it produced vomition, so afterwards it was given in capsules—in daily doses of 2 grains. The digitalis treatment did not produce any very marked improvement after a week's trial, so it was decided to destroy the animal. However, before doing so, I kept him under observation for some days longer, during which time he went worse. The breathing became more laboured, quicker, and the last day or two very much resembled that of a horse with hydrothorax. In addition he was getting very dropsical.

The dog was destroyed by means of chloroform on the 12th inst. The apparatus used consisted of a muzzle, into which was forced air, which on its way thither passed *through* some chloroform in a bottle. The amount of chloroform in the bottle was six drachms. There was little or no excitement, and a thing worth noting about the case was the fact that the heart stopped before the respiration in two and a half minutes after the administration of the anæsthetic. Breathing continued half a minute longer, and then stopped also. The amount of chloroform consumed was three and a half drachms.

Post-mortem made immediately.

Peritoneal cavity contained a quantity of serous fluid, which was estimated at one pint.

Stomach and Intestines were normal externally.

Liver congested. *Spleen* normal.

Kidneys—The left had a few white spots on the medulla; the right had its capsule adherent in places, and showed lesions which were probably due to interstitial nephritis.

Bladder contained only a small quantity of urine, which was only slightly albuminous.

The thorax contained 40 ounces (measured) of a reddish serous fluid, which coagulated on exposure to air.

Lungs slightly congested, and pigmented with black particles.

Pericardial Sac contained half an ounce of serous fluid.

Heart.—All four chambers filled with blood; the organ was flabby, and flattened out when placed on the table. Pulmonary semilunar valves normal. Aortic valves normal.

In cutting into the auricles it was seen that the auriculo-ventricular valves were affected with endocarditis, and that there had been marked incompetency. In order to preserve the true position of affairs the valves were floated up as in nature, and then the heart was hardened whilst in that position. After the hardening process, the appearance presented by

looking on the valves from above is depicted in the accompanying photograph, which is very nearly natural size. The mitral valve had smooth nodular prominences growing on both segments, the aortic one being most affected: here the nodules were 3 mm. thick, but on the other segment they were almost 1 cm. thick. There had been contraction, curling and puckering, of the valves as a result of the inflammatory process, and this had rendered this valve incompetent. In the state of nature the two segments hardly approximated much closer than they do in the photograph, and this will give some idea of the extent of the incompetency and of the deformity. The tricuspid valve was also affected, the nodules on the septal segment being the thicker; here also there had been contraction, puckering, and deformity, and, as a result, incompetency, but apparently not to the same extent as in the other case. Changes in the chordæ tendinæ of both ventricles had taken place, leading to shortening. It will be noticed that the aorta and pulmonary arteries have not in the photograph a circular outline. There has been some *little* distortion of these in the preparation of the specimen, but in the natural state these presented an irregular outline.

The walls of the left ventricle were in places very thin: this was easily seen on holding the heart up to the light. The thinnest place was near the apex, and measured only 2 mm. in thickness.

The walls of the right ventricle contained four thin places: the thinnest spot was only 1 mm. thick, and, judging from the appearance, was probably composed of fibrous tissue only.

Remarks.—Points worth noting about this case are—

(1.) The fainting fits, which are not common in the dog.

(2.) Absence of any murmurs, hindering the diagnosis.

(3.) The extent of the incompetency of both mitral and tricuspid valves.

(4.) The fact that the cardiac impulse could be felt on both sides of the chest.

(5.) The quantity of fluid found in the thorax.

For the admirable photograph I have to thank Dr. James Hunter.

FRACTURE OF THE KNEE WITH LUXATION OF THE METACARPUS.

BY VET.-LIEUT.-COLONEL J. C. BERNE (RETIRED), ARMY VETERINARY DEPARTMENT, HILSEA BARRACKS, PORTSMOUTH.

AN accident, probably unique, happened recently to a horse of the Royal Field Artillery under my charge at Hilsea Barracks, and illustrates the manner in which terrible injuries may follow from what are trivial causes, and which at first sight appear to be unattended with any damage.

The patient was a bay gelding, seven years old, 15·1½ high, and was being jumped over some hurdles in the drill ground, at one of which he fell. On getting up he was found to be very lame on the off fore, but was able to walk to the infirmary, a short distance away.

I saw him next day, and found the whole shoulder swollen, particularly, I thought, at the insertion of the postea spinatus muscle. There was also swelling of the knee, the whole limb being extended and semiflexed, resting on the toe: pressure on the part caused great pain.

The next day there was no change, but on the following I detected crepitus in the joint, and concluding that one of the bones of the knee was fractured, the animal was destroyed. Examination showed that there was a comminuted fracture of the scaphoid and lunar bones, with detachment of the articular surface of the metacarpus from the lower row of small bones of the knee.

I have seen cases of extensive fracture of the pelvis, where there was the condition known as "fragilitus ossium," but there was nothing as far as I could see in this case to explain the lesions I have described, and following on so simple an accident.

TWO PECULIAR CASES OF FARCY.

BY W. R. DAVIS. M.R.C.V.S., ENFIELD.

On September 17th last I was asked to attend a big nine-year-old cart horse, the property of a brick-field company. The horse had been bought six weeks previously and had worked well until the day before (16th), when he ate very little and was depressed and listless. He was thought to have taken a chill. The temperature was 103·4°, and the pulse and respiration accelerated slightly. Nothing abnormal was found on examining the heart and chest. Fæces and urine were normal. The horse was ordered to be rested, and salines were prescribed. On the 20th the horse was seen again, and was found to be about in the same condition—temperature still 103·4, very little appetite. I noticed, however, on the sides of the withers and on the shoulders a number of swollen lymphatics. On pointing these out to the attendant, he said that the horse had had a sore back for some little time, but that the "veins" had not been noticed before. The sore on the back proved to be a little raw patch in the middle line which admitted a probe an inch. I now examined the skin very carefully, and found on the off side of the neck, under the mane, a little rounded lump, which looked and felt suspiciously like a farcy button. The back, withers, and shoulders were ordered to be fomented and dressed with an antiseptic lotion, and 2 oz. doses of sulphate of soda to be given twice a day. This treatment was continued until the 27th. No improvement was manifested; on the contrary, two more little rounded lumps appeared on the off side of the neck, and swollen lymphatics were also found there. The off hind leg was also found to be swollen appreciably, but was not painful. The temperature still kept about 104°. The diagnosis glanders farcy was now made, and the horse was injected with mallein. An enormous local reaction, which persisted for four days, resulted. The swelling of the off hind leg had increased, and several typical farcy buttons appeared on it.

The case was reported to the police, and the horse was destroyed. I found afterwards that the horse had been bought at a repository, and came from the stud of a large firm of brewers.

March 30, asked to attend a cart mare, ten years old, which had been lame for some days, and had not been thriving lately. The mare belonged to a farmer, and had been bought two years ago. I found her to be lame on the off fore leg. The limb was dragged when she was made to walk. On manipulating it a swelling was detected between the knee and

elbow. This was most evident on the inside, where it prevented one feeling the radius. The swelling was doughy and slightly painful. The pulse was 50, respiration accelerated, and temperature 104°. The mucous membranes were free from petechiæ. The owner thought that the mare had been kicked. I gave a dose of physic, ordered fomentations and a cooling lotion and rest in a stall.

On April 1st the temperature was 105°, pulse 50, respirations much accelerated. No abnormal sounds could be detected on ausculating the chest. There was no nasal discharge, and no petechiæ. The swelling had increased a good deal, and now extended from the knee to above the elbow, where it ceased abruptly. It was still slightly painful. The lymphatic glands were not affected, nor were there any corded lymphatics. The mare was injected with mallein. A small local reaction resulted. This was rather painful, but had almost disappeared in fifty-six hours. The temperature still kept about 105°, respirations markedly accelerated, but pulse only about 50.

On April 8th the near hind leg was swollen, and the mare was lame on it. Meanwhile the swelling and the lameness of the fore leg had abated a good deal. The temperature was 104·3°, respirations much accelerated, pulse 55. The swelling extended up to the inguinal region, and was distinctly painful. Mallein again injected. A local reaction was obtained, but it was by no means well marked—the temperature two hours after inoculation was 105·2°. The mare had been isolated. She fed well all the time. She was given quinine and potassic iodide and salines.

By April 14 farcy buds and cords had developed on the swollen hind leg, and the mare was destroyed after the case had been reported. I had no opportunity to make a post-mortem of either case. A case of glanders farcy had occurred on the farm some years previously.

I have recorded these two cases because they serve to show how involved the clinical symptoms of glanders farcy may be.

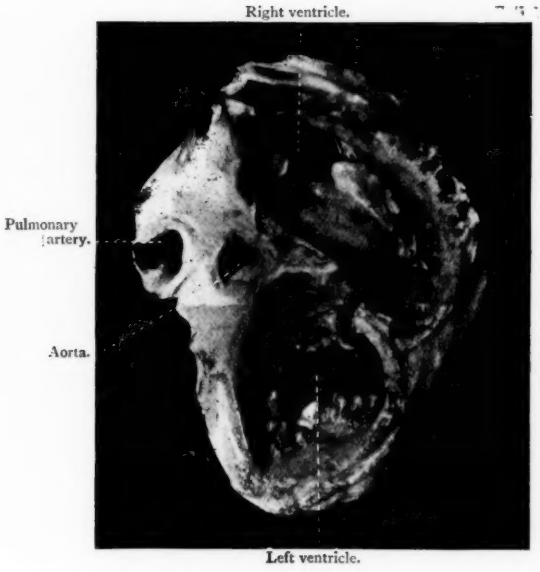
SLOUGHING OF THE SUB-MAXILLARY LYMPHATIC GLANDS FOLLOWING STRANGLES.

BY E. E. MARTIN, VET.-CAPTAIN, A.V.D., ARMY VETERINARY SCHOOL, ALDERSHOT.

THIS was a case in an Army Service Corps remount that had been admitted to hospital for skin-disease. Two or three weeks after admittance strangles developed. The abscess burst of its own accord, and was treated in the usual way.

Two or three days later it pointed about a couple of inches lower down. This was lanced, and about an ounce of pus evacuated. Both wounds did well for a time, but on the fifth day after the lower abscess had been opened a warty growth seemed to be filling each of the cavities.

I made an exploration with the finger, and by breaking down a few adhesions took away from each wound a roundish body, about the size of a bantam's egg in one case, and a pigeon's egg in the other. Incision into these showed they were firm in consistence, and on sections being cut it was found to be lymphatic gland tissue. Both glands seemed perfect, and there was no suppuration or degeneration in their substance.



DISEASE OF THE AURICULO-VENTRICULAR VALVES.

The wounds, after these glands were removed, filled up rapidly, and the animal has not seemed to suffer in any way from their removal.

This case is, I believe, by no means unique, but is sufficiently uncommon to be placed on record. I may say it is the first I have ever seen.

Translations and Extracts.

OPERATIONS ON THE TEATS OF A COW.

BY M. ANKER.

OPERATIONS on the teats have not been as successful as might be desired, no doubt from failure in carrying out asepsis, but if done by a skilled operator in many cases the whole gland, or even a quarter, can be preserved.

Diseases of the teat are congenital or acquired, and amongst the first the most important are atresia and stricture of the duct, supplementary canal, and warts. Before operating the author fastens the hind limbs with a figure of eight rope, and draws the tail to one side so as to prevent the part being dirtied. He has the cow's head held by a strong assistant holding her by the nose, which he finds better than tieing her up to a rack or tree. He carries out strict antisepsis.

A. Atresia of the Duct.—This is generally seen in primipara. The author has never seen complete absence of the duct, only obliteration of the external orifice, and it often exists in all four teats. Diagnosis is easy; the teats are swollen and distended with milk, but notwithstanding all manipulation it is impossible to extract any.

Treatment.—The teat is grasped at the centre, and pressed so that the skin over the tip is rendered tense, and a straight narrow-bladed scalpel is passed in at the most prominent point. As soon as the skin is perforated exit is given to a jet of milk, and no further treatment is required.

B. Stricture of the Canal.—This is also congenital, and may exist in all four teats. When the animal is milked the milk comes out in a very fine jet. Constriction frequently is the result of an injury, and in this case it is limited in extent, and a hard induration can be felt, and as the end of the teat is soft this can be easily detected. The author does not recommend sounds or bougies, as their constant use is likely to cause contamination of the gland. He prefers a straight probe-pointed knife, narrow in the blade, the edge of which is blunt a quarter of an inch from the point and handle. The teat is grasped at the centre so as to stretch the lower portion, the instrument passed into the canal, and pushed straight upwards, when the stricture is divided, and a flow of milk at once takes place. In order to prevent healing by the first intention it is only necessary to draw the udder frequently during the first few days; in fact, it is dangerous to use sounds or sponge tents on account of infection.

C. Supplementary Canal.—This may be seen on either the anterior or posterior teats—in the former on the anterior, and latter the posterior faces, and when the gland is drawn milk will escape either in a few drops or a fine jet. If a sound is passed it will be found that it may penetrate to either the sinus or the canal.

Treatment.—It is advisable to wait till the cow is dry, when good

results may be obtained. The interior of the supplementary canal is cauterised with a hot wire or metal probe so as to destroy the walls. Two pins are passed crossways over the orifice, with a figure of eight suture round them, the ends are cut off, and in about ten days the pins come away, when it will be found that the granulating surfaces of the duct have united and it has closed up.

D. Warts.—Different sorts of warts are seen on the teats; one species appears to be a number of grey nodules, separated from each other by grooves of variable depth, and which easily bleed. They are seen during the time the cow is in milk, and go away without any treatment when she dries up. Another form is chiefly seen in young animals, and vary from the size of a hen's egg to that of a pigeon. The smallest are covered with a layer of skin, but the largest, which are denuded of it, have a roughened appearance, and are in reality papillomata. These are easily pulled off or removed by a ligature round the base.

In certain cows tumours form on the mucous membrane lining the canal, which can be felt as a thick cord under the fingers. Many authors advise curetting the canal with a special instrument, but the author is not in favour of this. He recommends waiting till the cow is nearly dry, and then applying massage two or three times a day to the part, rolling the teat in the fingers. By this plan the growth becomes pedunculated, the stalk can by manipulation be broken, and the tumour expelled in the milk.

Amputation of the Teat.—This is sometimes necessary after a violent contusion, when cicatrisation will not take place. The teat should be removed at the upper third, and to prevent dangerous bleeding a ligature should be put on for three or four hours.

(*Tijdschrift voor Veeartsenijkunde*, Oct. 1902.)

DISLOCATION OF THE ELBOW-JOINT IN THE HORSE.

BY M. CASTAGNE, OF VILLE-FRANCHE-DU-PERIGORD.

DISLOCATION of the elbow in the horse is a most rare cident and is usually most serious, as it is complicated by a fracture. The author saw a most interesting case in which a radical cure was effected in a month after reduction. The dislocation occurred in the right limb and was outwards; it took place when the patient was harnessed in the shafts of a waggon at the moment that the fore-arm was flexed on the arm.

Reduction was easily effected, but the author saw the case at once and no bandage or restraining apparatus was required. The olecranon is grasped with the left hand, the fingers pressing on the salient condyle of the humerus. The right hand raises the knee and flexes the dislocated articulation, the pain making the horse rear, when traction will be exerted upwards and forwards on the humerus, and behind downwards on the olecranon, by the flexion of the luxated joint. When reduction takes place a shock is communicated to the hand, and a sharp click which is quite different to the crepitus of two broken bones.

As soon as the dislocation is reduced the animal tries to put his weight on the limb, but is prevented doing so by the pain caused.

In this case there was considerable swelling round the elbow-joint, but

it disappeared. For eighteen days the horse was kept in slings, and treatment consisted of continuous irrigation with douches, massage, and gradually increased movements of the joint. The animal returned to work on the twenty-fifth day.

(*Revue Vétérinaire*, Oct. 1902.)

FALSE LOCOMOTOR ATAXY IN THE DOG, SUPERVENING ON DISTEMPER.

THE case came under the notice of M. Ben Danou, of Paris. The patient was a young sheep dog 10 months old, and had suffered from distemper.

He was in bad condition and movements were not co-ordinate. There was staggering of the hind quarters, the head carried forwards, and, as if overcome by the weight of the body, he would fall forwards on his knees. The appetite, however, remained good.

The animal was given an active saline purgative, and the excretion of urine stimulated by turpentine, a stimulant liniment applied twice daily to the loins, which were previously shaved, with massage, and good food. This treatment was continued for a fortnight with good results, and the animal cured.

(*Revue Vétérinaire*, Nov. 1902.)

PERMANGANATE OF POTASH IN THE TREATMENT OF ULCERATION OF THE CORNEA.

M. BEN DANOU, of Paris, has used a warm solution, 0·5 per 1000, of permanganate of potash in ulcerative keratitis, and mentions three cases.

1. A puppy suffering from distemper and deep ulceration of the right cornea, which was opaque. The permanganate of potash solution instilled in the eye caused it to rapidly clear up and the ulcer to cicatrise. The case was cured in ten days.

2. A small griffon—traumatic ulcerative keratitis. Same treatment and cured in the same time.

3. Dalmatian dog — double ulcerative keratitis. Same treatment; cured in same time.

Last, a bulldog suffering from diabetes, complicated with double ulcerative keratitis and hernia of the iris, which was cured in fourteen days.

(*Revue Vétérinaire*, Oct. 1902.)

EPIZOOTIC SUPPURATIVE SUBMAXILLARY ADENITIS OR "STRANGLES" IN THE PIG.

BY M. STARCOVICI.

A LONG time ago, under the name of "strangles," Lafour described an affection of the pig, characterised by suppuration of the parotid, prescapular, and inguinal glands. The relation of this disease with equine strangles

is exceedingly problematic, but nevertheless it seems under certain conditions to assume an infectious character. Starcovici mentions an epizootic that broke out in the town of Hushi, in Roumania, which he attributed to infection, the pus from the abscesses containing both bacteria and streptococci. Similar cases have been seen in France, but not in the nature of an epizootic.

(*Revista de Medicina Veterinara*, Nov. and Dec. 1902.)

OSTEO-SARCOMA OF THE LOWER EXTREMITY OF THE FEMUR IN THE DOG.

COMMUNICATED BY M. G. PETIT TO THE CENTRAL VETERINARY MEDICAL SOCIETY, PARIS, 2ND APRIL 1903.

GENTLEMEN—I bring before you an exceedingly good specimen of Osteo-Sarcoma from the femur of a dog. The patient suffered from a large swelling of the stifle joint, which had been diagnosed as a *tumour* or arthritis of some standing, giving rise to a thick peripheric capsule of fibro-lardaceous tissue. The animal was destroyed, and I have here the specimens. The stifle joint was sawed through longitudinally down the centre of the bones. It will be seen that the articulation is perfectly healthy, but that there is a large tumour on the lower extremity of the femur, measuring about 4 inches across, whereas at its upper part the bone is only about ¾ inch. The tumour is bony in structure except at its outer portion, where it is composed of granulating material and calcareous septa. The tissue is not quite so compact as healthy bone, and the line of demarcation where it invades it can be distinctly seen, the medullary canal at this point being blocked up.

In fact the femur from its central portion to the lower articular surface is completely surrounded by the growth, which without doubt originally commenced from the periosteum. From the history of the case it would appear that it had first commenced to form about six months ago. I should add that the muscles at the anterior aspect of the thigh were of a fibro-lardaceous consistency, and were undoubtedly involved, and that a microscopic examination showed it to be a true osteo-sarcoma.

(*Bulletin de la Société Centrale de Médecine Vétérinaire*, April 2nd, 1903.)

NOTES ON THE PRESENCE OF ARSENIC IN THE ORGANISM.

BY M. J. BERTRAND.

THE author has made some improvements in Marsh's method which enables him to detect quantities of arsenic below a milligramme, and has found that under normal conditions it is present in the hair, horn, and hoofs of oxen, and horn and claws of the dog. He has also studied the question as to its existence in animals that have a lower organisation than the mammalia, *i.e.*, if arsenic is a primary element in the living cell, or if it is only used in special functions, and is only present in the higher scale of life.

It has been necessary, therefore, to make use of animals in their natural element, where there could be no chance of accidental contamination with

arsenic. He has with considerable trouble and all precautions experimented on a large number of marine animals from the higher vertebrata to the sponges, and detected in the tissues an appreciable quantity of arsenic, proving that it is present in the living cell in the same way as carbon, nitrogen, sulphur, and phosphorus, and is a primary constituent of the protoplasm.

These researches, together with those of Armand Gautier, open up a new view for both the chemist and physiologist. It also raises the medico-legal question as to whether the qualitative analysis for arsenic is sufficient.

(*Annales de l'Institut Pasteur*, 25th Jan. 1903.)

LUNGWITZ'S METHOD OF DIAGNOSING NAVICULAR DISEASE.

BY M. G. JOLY, CAVALRY SCHOOL, SAUMUR.

LUNGWITZ'S method of diagnosis is so valuable in cases of navicular disease and is so simple in application that it is curious that it is not more often applied in practice.

At Saumur it is used almost daily. A wedge-shaped piece of wood 8 inches long by 6 inches wide, sloping at an angle of 18°, is placed under the suspected foot, the point towards the heels and the base to the toe; the other foot is lifted up, and if the animal is suffering from navicular disease he manifests great pain and throws his weight on the hind limbs; as soon as the foot that has been lifted up is let down he carries the one he has been standing upon either forwards or backwards, so as to relax the tension on the flexor tendon. If, on the contrary, the wedge is placed with the base under the heels so that they are elevated, and then the other foot lifted up, the horse will not show any pain. If there should be any doubt both feet should be tested.

By Lungwitz's plan I have at Saumur been able to diagnose navicular disease in nine cases out of ten of foot lameness not of traumatic origin, the accuracy of which were conformed by post-mortem examination, and the extent of the lesion corresponding with the symptoms shown.

(*Revue Générale de Médecine Vétérinaire*, 15th Feb. 1903.)

BERLIN VETERINARY COLLEGE FOR YEAR 1901-1902.

FOR the summer session there were 467, and the winter 484 students, out of which 65 and 49 respectively had come from other colleges, and 34 from the Military Veterinary School.

Examinations in natural science were held four times, with the following results:—

	Candidates.	Very good.	Good.	Fair.	Bad.	Very bad.
April,	72	7	23	19	19	4
July,	15	—	2	13	—	—
October,	33	3	8	12	2	2
January,	31	—	2	15	14	—

During the two sessions 170 candidates presented themselves for the final examination for the diploma; 98 were successful, 72 were rejected.

In the polyclinic were 11,045 horses, 2 oxen, 2 donkeys, and 4 goats.

In the small animals clinic 730 dogs were treated in the hospital, and 253 operations performed. 10,966 cases were treated as out-patients, of which 10,023 were dogs.

In the medical clinic for large animals were 1423, and 308 horses were examined for soundness.

In the surgical wards, 801 horses were treated, and 417 operations performed.

In the pathological laboratory 302 post-mortem examinations were made on horses and 1 ox.

Extramural visits were made to 466 cases; 81 horses, 429 bovines, 216 pigs, and 3 goats were treated.

(*Revue Générale de Médecine Vétérinaire*, 15th Feb. 1903.)

STRANGLES IN THE GERMAN REMOUNT DEPÔTS, BECHER.

In 1901-2 3931 remounts were affected with strangles, or about 42 per cent. This is 5·5 per cent. below the cases in 1900-1, but above the average of the three preceding years, which was 30·1, 39·6, and 41·5 per cent. 104 deaths took place, or 2·7 per cent., against 1·8 per cent. in 1900-1. The mortality varied greatly at different depôts, being 6·5 per cent. at Arendsee, and 0·5 per cent. at Ferdinandshof. The immediate causes of death were variable, and the author mentions one as being particularly curious and uncommon, in which an abscess had formed in the pericardium, the walls of which were three inches thick, and the muscular tissue of the heart atrophied.

Both atmospheric and hygienic conditions were great factors in the course of the disease.

(*Zeitschrift für Veterinarkunde*, Jan. 1902.)

HORSES IN THE FRENCH ARMY.

Cavalry horses, . . .	68,350
Artillery, . . .	37,350
	105,700

The King, his Army and Navy, May 2nd, 1903.

AN OBSTETRIC BANDAGE.

BY M. VICENTINI.

Many of the bandages recommended for eversion of the uterus are complicated, and the best, such as Lund's apparatus, is not always at hand when required. The one described by the author can be made anywhere out of rope, and has been proved to be of the greatest service.

The cow has a collar or breast-band put on her, which can be improvised out of a girth, body collar, or stirrup leather. To this a cord the size of the little finger is fastened at each end, and passed round the body under the tail, and a second one about 14 feet long is used, as shown

in Nos. 1, 2, 3, and 4; that is to say, after being wrapped round the first in the centre part, as shown in No. 1, each end is tied in chain knots, as shown in No. 3, so that the series are the length of the vulna. The ends

Fig. 1.

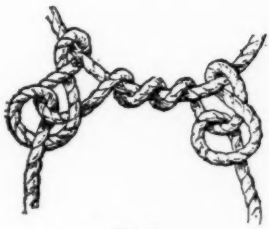


Fig. 2.

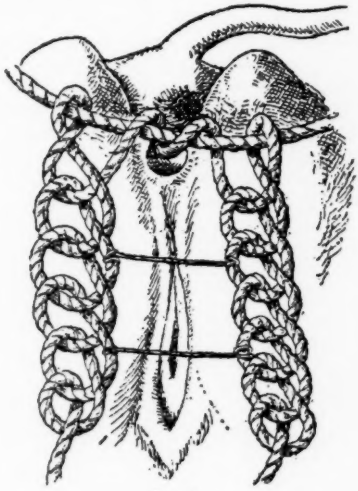


Fig. 3.

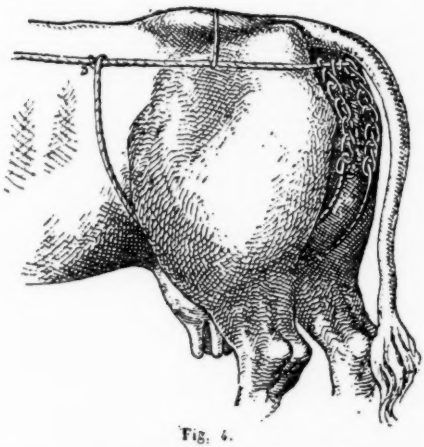


Fig. 4.

are then passed between the thighs on each side of the udder, and made fast to the first cord in the region of the loins, as shown in No. 4. The two chains of knots can be brought together by two or three small cords, as shown in No. 3, and the first cord can, if necessary, be supported over the loin.

(*Giornale della Societa ed. Accademia Veterinaria Italiana*, March 1903.)

IRREGULAR DENTITION IN THE HORSE.

COMMUNICATED TO CENTRAL VETERINARY MEDICAL SOCIETY OF PARIS BY M. DECHAMBRE.

M. CURAT has recently brought to my notice a case of irregular dentition that is of sufficient interest to bring before the Society.

The subject was a red roan Hungarian gelding ten years old. In the upper jaw there was a supplementary corner incisor on the left side. It was rudimentary, and only half the length of the normal tooth, and consequently was not worn down. In the lower jaw there were two supplementary dividers *and* corner incisors. On the left side both were normally developed and worn, but not on the right. The normal teeth were perfectly regular, the supplementary being in front of them. The dental formula in this case was $\frac{7}{10} = 17$ and not $\frac{6}{6} = 12$.

The case appears to be an uncommon one, supplementary teeth not being so common in the lower as the upper jaw.—*Vide l'Exterieur du Cheval*, Goubaux & Barrier, 2nd edition, page 738.

(*Bulletin de la Société Centrale de Médecine Vétérinaire*, March 26th, 1903.)

ON THE IDENTIFICATION OF DIFFERENT SORTS OF MEAT BY PRECIPITATION WITH SERUM.

BY M. H. VALLÉE, OF ALFORT.

IT has been recognised that the presence of glycogen as a means of identifying horse flesh is not quite satisfactory, and that at present there are no chemical means known by which flesh from different species of animals can be detected, whereas on the other hand the biological process by means of precipitant serums is highly valuable.

Ohlenhuth [1] points out that butchers' meat, no matter how well the carcase has been bled, always contains a certain amount of blood, and he was one of the first to obtain from a maceration of meat in water a characteristic precipitant.[2]

Pork macerated in serum gives a clear precipitant with serum from a rabbit treated by injections of pig's serum, whereas this serum will not cause any precipitation in macerations of other sorts of meat.[3]

Notël [4] used precipitant serum to recognise horse flesh.

Meissner, Herbet,[5] Kieter, and Wolff, have all studied the subject and published articles on it.

[1] Ohlenhuth. Unterscheidung des Fleisches Verschiedener Thiere mit Hilfe Spezifischer Sera, und die praktische Anwendung der Methode in der Fleischbeschau.

[2] In continuation of the remarks that I have made on precipitant serums, I would point out how easily they can be used and the certainty the results obtained can be relied upon if ordinary precautions are observed.—See Revue, 1903, page 3.

[3] In an article published in 1902 in No. 46 of *Berliner Thierärztliche Wochenschrift*, Yen of Charlottenburg wrote that he had discovered this biological method of distinguishing different kinds of meat before Ohlenhuth. No doubt Yen did state that this method could be carried out, but Ohlenhuth was the first to give precise details.

[4] Notël. Ueber ein Verfahren zum Nachweis von Pferdefleisch. *Zeitschrift für Hygiene*, vol. xxxix. part 3.

[5] Meissner and Herbet. Die Serum agglutination und ihre Bedeutung für die Fleischuntersuchung. *Archiv für Wissenschaftl. und prakt. Tierheilkunde*, 1902, parts 3 and 4.

The first step necessary is to obtain a solution of the albumen in the substance under examination, which can easily be done with raw, smoked, or salted meat, but cannot with cooked, the albumen being coagulated and insoluble. The meat should be finely minced and macerated in an 8 per cent. solution of chloride of sodium to which is added 50 per cent. carbolic acid. Meissner and Herbet recommend this to prevent the growth of micro-organisms in the solution. Meissner and Herbet use 1 part of fresh meat to 50 of saline solution, and 1 part smoked or salted to 25 of water. I have used these proportions successfully.

The preparation while in process of maceration should be kept in a cool place for at least twelve hours, and shaken from time to time. It is then filtered through muslin to get rid of the material, and the pink fluid again passed through a quadruple paper filter several times until it is perfectly clear.

If it is only required to determine if the suspected meat is horse flesh, it is only necessary to take 2 cc. of the filtrate, and add 1 cc. of serum from a rabbit that has been inoculated several times with horse serum. The tube is kept in as cool a place as possible with a control tube to which no serum has been added. The result will usually be seen between the second and sixth hours, but it is advisable to allow ten or twelve hours to elapse. If the meat is not horse flesh the solution will remain clear, but if, on the contrary, it becomes slightly turbid in half an hour, which turbidity increases up to the tenth or sixteenth hour, the meat is horse flesh.

If it is necessary to determine what sort of meat the specimen is, five tubes containing the solution have to be used as follows:—

I.	2 cc. solution	plus	1 cc.	precipitant serum of	Horse.
II.	"	"	"	"	Ox.
III.	"	"	"	"	Pig.
IV.	"	"	"	"	Dog.
V.	"	or control tube.			

The tubes are treated as before and examined up to the sixteenth hour. If, for example, tubes I. and III. become turbid, then it may be taken for granted that the suspected substance is composed of a mixture of horse flesh and pork.

In the case of pork the test is absolutely reliable, also with horse and dog flesh, but not with beef, as ox serum will to a certain extent also precipitate mutton and goat flesh. Even in this case the test is useful, for if the minimum dose is used a solution of beef is only slightly troubled, and that of mutton and goat flesh gives no reaction. In no case should the experiment be continued for more than sixteen hours, or error may arise by precipitation taking place through the action of micro-organisms quite apart from the serum, and if the control tube gives a precipitate at the end of the experiment it should be commenced again. The activity of the serum should be tested on a solution of known composition.

In conclusion, I would point out that I have frequently used this method and have every confidence in it as a valuable test, and certainly think it ought to be known to all meat inspectors. In order to popularise the plan, precipitant serum for beef, pork, horse, and dog flesh is sent gratuitously from the Alfort College to all meat inspectors in France.

(*Revue Générale de Médecine Vétérinaire*, 15th Feb. 1903.)

THE DETECTION OF HORSE FLESH BY MEANS OF A SPECIFIC SERUM.

THE juice of the horse flesh, which is got in the following manner, that is, by bringing it to freezing-point in a refrigerator and then allowing it to thaw out, is passed through a filter and injected subcutaneously into a rabbit. The injection of 5 to 10 cm. is continued every eight days. After eight to nine weeks' treatment the animals are left with a reactionary serum. The serum is got in a sterile manner and keeps for five or six days. In the living rabbit the serum retains its properties for four to six weeks. In order to *maintain* the power in the serum they must be again inoculated every four weeks.

For the detection of horse flesh a small quantity of the suspected flesh is chopped fine, put into a test-tube, covered with normal salt solution, and the whole shaken up together. The drier the flesh the longer must it undergo the action of the salt solution, up to twenty-four hours even.

The resulting liquid is filtered through a fourfold filter till completely clear, and to 5 cm. of the filtrate 1 cm. of the special serum is added by means of a pipette. Without shaking, if we are dealing with horse flesh, a cloudiness appears instantly, or at the latest within a minute, which thickens to a fine or thick flocky precipitate.

The ability of the serum to react ought in all cases to be previously tried.

This test is not intended to detect horse flesh in preparations of meat which have been cooked or heated.

(*Berlin. Thier. Wochenschrift*, 22nd Jan. 1903.)

ULCERATION OF THE STOMACH IN A COW.

BY M. MOUSSU.

Communicated to the Paris Central Veterinary Medical Society, Feb. 22nd, 1903.

GENTLEMEN—Some years ago, in October 1895, I brought to your notice some specimens of gastric ulcer, and mentioned what I considered to be the chief diagnostic symptoms, at the same time pointing out the extreme difficulty there was in arriving at a conclusion. In presenting these fresh specimens to you to-day I wish to remark on possible complications. The case from which they were taken was a cow thirteen years old, and placed under my care by M. Gervais, of Loudon, Poitou. Although well fed she never was in prime condition, but as she was a good milker her owner had kept her. The abdomen was always distended, the appetite capricious, and digestion imperfect. There was always constipation, the excrements being black, hard, and sometimes coated with mucus.

During the past five months her condition had been becoming worse, and as she was in calf M. Gervais consulted me as to the possibility of dropsy of the amnion. She, however, calved normally and without difficulty, but her condition, instead of improving, become worse, the abdomen becoming enormously enlarged and the appetite greatly diminished.

Under my care there was no improvement. I ordered daily doses of laxatives to overcome the obstinate constipation that existed, but the black excrements mentioned by M. Gervais were never noticed.

The patient was not tuberculous and there was no rise in the temperature, careful examination revealed nothing wrong with the respiration, circulation, or urine. It seemed, therefore, that the digestive system must be at fault, for although rumination was irregular it was carried on and peristalsis had not altogether ceased.

Exploration of the abdomen showed a moderate amount of fluctuation, and, like M. Gervais, I arrived at the opinion that it was due to ascites, but from what cause I was unable to say as the liver did not appear to be implicated.

This diagnosis, without being absolutely wrong, was incorrect, and even if I had attached greater weight to the hard and scanty nature of the excrements, coupled with the negative results of my examination of the heart, lungs, and kidneys, I still should have been wrong. Influenced, however, by my diagnosis, I twice performed paracentesis and drew off from 8 to 10 litres of a rose-coloured fluid, which in this respect differed from that found in an ordinary case of ascites, and, in consequence, I came to the conclusion that the case was one of chronic peritonitis.

To my surprise she completely collapsed a few hours afterwards, and died suddenly in endeavouring to get on her feet.

On making a post-mortem examination all the viscera were intact except the abdomen, on which along its greater curvature were ten or twelve ulcers varying in size from a bean to a 5-franc piece, circular in shape, and clean cut as if stamped by a punch. Some only implicated the mucous membrane but others penetrated the muscular coat as far as the peritoneom, and one had perforated the wall of the viscus. This, no doubt, was the cause of the rapid increase of the symptoms during the last few days.

If we can compare this case with what we know about ulceration of the stomach in man, and admit that it may have been in existence for a long time, possibly years, it will explain the case.

I should mention that, contrary to previous reported cases, I found the abdomen full, but all the same the only diagnostic symptoms are digestive derangement, overloading of the stomach, constipation, and more particularly hard fæces found in small quantities.

(*Bulletin de la Société Centrale de Médecine Vétérinaire*, Feb. 23rd, 1903.)

THROMBOSIS OF THE ANTERIOR VENA CAVA IN THE HORSE.

BY PROFESSOR ALBRECHT, MUNICH.

THE author was called in in consultation on June 5th to a horse in the stables of Prince Hohenzollern. The animal, six years old, had been in good health for the past two years, and the first symptoms were noticed on 18th April, in the shape of a small painless swelling on the off knee, although it was said that a few days previous a similar one which had disappeared had come up on the near one. This swelling, which was never painful, and appeared to be œdematous, gradually extended to the elbow. There was swelling of the knee, extending up the arm and chest near to the point of the shoulder, gradually meeting with that on the off side,

and extending downwards to the foot, and finally both jugular channels were implicated.

On 15th May the swelling had slightly decreased, but movement was difficult. The general health remained good. Temperature normal, and nothing revealed on auscultation. No veinous regurgitation or abnormal urine.

Congestion of the glosso-facial veins then took place, the patient becoming dull and refusing to lie down. On June 3rd the swelling had greatly increased, extending under the abdomen, and the appetite was lost.

When seen by Professor Albrecht on June 5th the animal was in good condition, the coat fine and brilliant. The swelling was so great that the jugulars could not be raised up by compression. The head was not swollen, but the veins were standing out in strong relief. The mucous membranes were red and congested, the pupil being slightly dilated. Temperature 100·4°, pulse 42 per minute and slightly intermittent. The extremities were not cold, neither were the œdematous swellings. The heart-beats and respiration were normal, and there was no derangement of the digestive system. The urine was high coloured, strongly alkaline in reaction, and contained chrystals of carbonate of lime in suspension, but no albumen or biliary colouring matter. Blood taken from the jugular was normal on microscopic examination. The patient moved with great difficulty.

These symptoms, together with the engorgement of the jugulars and veins of the head, pointed to some condition of the anterior vena cava that obstructed the return flow of blood, with the probabilities of it being behind the point of junction with the axillaries.

A pathological condition of the heart could be eliminated (the hypertrophy that was discovered was not functional). There was no tricuspid insufficiency or myocarditis, and the pulse was strong; furthermore the healthy condition of the heart was confirmed by the microscopic examination of the blood, which showed the absence of leucæmia or pernicious anæmia. In the same way microscopic examination and analysis of the urine negatived the suggestion that kidney troubles were the cause of the primary œdema.

The blood-stasis being constant and the seat of the lesion undoubtedly the anterior vena cava, it was not difficult to conclude that the obstruction was due to a thrombus. As to its nature the normal condition of the lungs showed it was not due to increase in size of the bronchial ganglia, or a neo-formation in the mediastinum pressing on the vena cava, and also such a tumour formed in the neighbourhood of the vein would undoubtedly press on the trachea, lung, and vagus nerve, giving rise to other symptoms.

The case was kept under observation for five days, during which all the symptoms became aggravated, being then considered hopeless it was destroyed.

Post-Mortem.—About two pints of fluid escaped from the mediastinum. The vena cava, an inch from the auricle, was surrounded by a fibrous growth the size of a man's clenched fist. The coats of the vein were greatly thickened, and the interior studded over with small abscesses containing thick pus. The vein contained a thrombus $4\frac{1}{2}$ inches long, circular in shape, red in colour, and dense and somewhat elastic in consistency. It was pierced with a canal $\frac{3}{8}$ths of an inch in diameter, the lumen of which was roughened. The vein in front of the thrombus was greatly dilated, and the

inner aspect of the auricle was roughened in the same way as the canal in the thrombus. The other cavities of the heart and the valves were healthy, but the heart was slightly hypertrophied.

The formation of the thrombus admits of two explanations, viz.—by compression from the tumour, and by direct action on the coats of the vein of the micro-organisms in this tumour; however, a bacteriological examination was not made.

The exciting cause of the tumour was attributed to an attack of strangles two years previously, and its nature and condition of the coats of the vein confirmed this theory. The absence of any veinous pulse is easily accounted for by the healthy state of the tricuspid valves. Prolonged stasis of veinous blood, highly charged with carbonic acid, undoubtedly had an injurious effect, as well as increased pressure in the aorta.

The reason why the nerve centres continued to act normally can only be accounted for by accommodation, and the same that the venous stasis did not excite the respiratory centre, and cause acceleration of respiration.

The curious fact that the pulse was not increased notwithstanding the obstruction is explained by the pressure being regulated by an increased flow towards the posterior aorta. The intermittent pulse is more difficult of explanation, but can be accounted for by nervous atony.

Nothing abnormal was expected to be seen in the posterior vena cava, as there was no increased pressure. No doubt there was increased pressure in the thoracic duct, but it never reached a point sufficiently high to cause inconvenience, and there was never any enlargement of the hind limbs.

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(*Zeitschrift für Thiermedicin*, Dec. 1902.)

CHOREA OF THE DIAPHRAGM IN THE HORSE.

BY M. LEON DUPAS, VETERINAIRE EN 2E, 31ST REGIMENT OF ARTILLERY, FRENCH ARMY.

CHOREA of the diaphragm, also called clonic spasm of the diaphragm, abdominal palpation, diaphragmatic neurosis. Hoquet, &c. is not uncommon in the horse, and if its absolute cause is in dispute, it is well

known that in the vast majority of cases it comes on after excessive muscular exertion, although drinking very cold water will no doubt also give rise to it.

Those who have closely studied the subject, in particular Thomassen [1] and Schiff,[2] have agreed that there is a relation of cause and effect between the beats of the heart and the spasms.

An exceptional case of this nature lately came under my notice, as during the crisis of the attack the abdominal spasms were never of the same number or in rhythm with the beats of the heart.

On 21st October at about 6 P.M., an officer's charger, a mare thirteen years old, was brought to my notice by the owner, who was much alarmed, suffering from spasm of the diaphragm. During some manœuvres the day before she had covered some 60 to 70 kilometres at a quick pace but without being distressed, and that day 50 more. At a halt about 2 P.M. she was suddenly attacked. She refused both food and water, and was led back to barracks at a foot's pace, 8 kilometres. The number and violence of the spasms was neither increased nor diminished during this journey.

The animal appeared to be more alarmed than in pain or discomfort, she was tired, but excitable as she naturally was. The spasms were very violent, abrupt, and regular, both in force and rhythm, 86 per minute. They shook the whole body, particularly the thorax, and were visible on both sides, more particularly the left. To the hand, on the extremities of the last ribs, and the whole length of the left hypochondric region, vigorous shocks were communicated that undoubtedly were caused by the diaphragm, but no contraction of the abdominal muscles was noticed.

A proper auscultation of the chest and heart was impossible, but the heart-beats were 72 to 75 per minute, the pulse small and irregular. The respiration were quick, short, and at times spasmodic, the muscles of the flank and nostrils were constantly on the move.

The conjunctiva was injected and slightly yellow, the temperature 38·3° Centigrade. When offered water the mare drank greedily. She was well rubbed down and clothed, left quiet, and given a mash with gruel.

On the 22nd she was feeding well, and the spasms reduced to 60 per minute. The pulsations in the glosso-facial vessels were more marked but irregularly intermittent, and 56 per minute, respiration 16, and temperature 37·5 Cent.

On the 23rd the pulse was 40, and the spasms reduced to 25, variable in strength, four or five feeble ones following a violent contraction.

On the 24th the spasms were very feeble and rare, being more discernible to the touch than sight; and on the 25th the mare returned to her work, which she has been doing ever since.

There are three points that appear to me to be worthy of notice:—

1. The extreme frequency of spasms (86 per minute) at the commencement.

[1] Clonic spasm of the diaphragm in the horse.—Annales de Médecine Vétérinaire, January 1892.

[2] The left phrenic nerve runs over the base of the left ventricle, and if it is stimulated, "as, for example, by section." the left half of the diaphragm contracts at each systole. Schiff attributes these rhythmical contractions to stimulation of the nerve by an electric current produced from the heart at each systole.—Schiff, Archives des sciences physiques et naturelles de Geneve, 1877.

2. The numerical difference between them and the heart-beats.
3. The regularity of the spasms up to the third day strongly contrasted with the irregularity of the pulse.

It would appear that the theory put forward by Thomassen, Haubner, Siedamgrotzky, &c. of direct stimulus to the phrenic nerve by the heart could not apply to this case.

It is known that the formation of lactic acid takes place in muscle when fatigued, and which, acting on the nerve or directly on the fibres of the organ, causes contraction, and this theory appears to apply to the case in question, and the contractions appear to be of the same nature as those that take place in animals that have been hunted—deer, hares, &c.

(*Revue Générale de Médecine Vétérinaire*, 1st March 1903.)

WHORLS AND CRESTS OF HAIR AS ANIMAL PEDOMETERS.[1]

BY WALTER KIDD, M.D., F.Z.S.

THE works of man which he devises for his physical and mental advance ment are marked by a precision varying with the degree of maturity of his science, and one of the smaller among these is the pedometer, an instrument requiring here no description. By a somewhat elastic use of the idea of a pedometer, one may find among the phenomena of nature certain which may be termed *animal pedometers;* these, like all the products of nature's handiwork, are lacking in the exactness of human appliances. But they are none the less significant of certain habits belonging to the animals which possess them.

Comparatively few animals can be said to carry about on their bodies a register of their locomotive activity as a cyclist does on his machine, or a pedestrian in his pocket. Nevertheless, those few mammals that display pedometers on their hairy coats, "*urbe et orbe*," show an advance in one particular upon any of man's pedometers, inasmuch as fairly clear records of ancestral as well as individual activities are indicated. The phenomena here looked upon as animal pedometers are those arrangements of hair which we know as whorls, found in various regions of the bodies of animals, and seldom in any but the short-coated forms. These whorls do not often exist alone, but usually are associated with a feathered arrangement which proceeds against the general stream of hair adjoining them, and this feathering generally terminates somewhat sharply in a ridge or crest. Whorls, featherings, and crests then constitute a fully-formed "pedometer" in this connection. The best examples of these, and the most familiar, are those seen on the horse, and they are so far removed from being accidental or indifferent phenomena, and are so clearly brought under certain simple laws of physical causation, as not only to deserve but to demand interpretation. Few thoughtful persons will dissent from the remark in the conclusion of Jevons' "Principles of Science," where he says, "Now among the most unquestionable rules of scientific methods is that first law that *whatever phenomena is, is.* We must ignore no existence whatever; we may variously

[1] Through the kind courtesy of the editors of *Knowledge*, we are enabled to reproduce this most interesting article.

interpret or explain its meaning and origin, but if a phenomenon does exist, it demands some kind of explanation." To these small and apparently unimportant fragments of nature's handiwork, which are here called pedometers for the sake of emphasis, this unexceptionable remark of the great logician applies.

It may be best at the outset to state that, from their intrinsic importance, whorls, featherings, and crests are excluded entirely from the province of any form of selection, being in no way useful to the animal possessing them, and in no degree produced by artificial selection or breeding. Their production must be sought elsewhere, and no view of this is

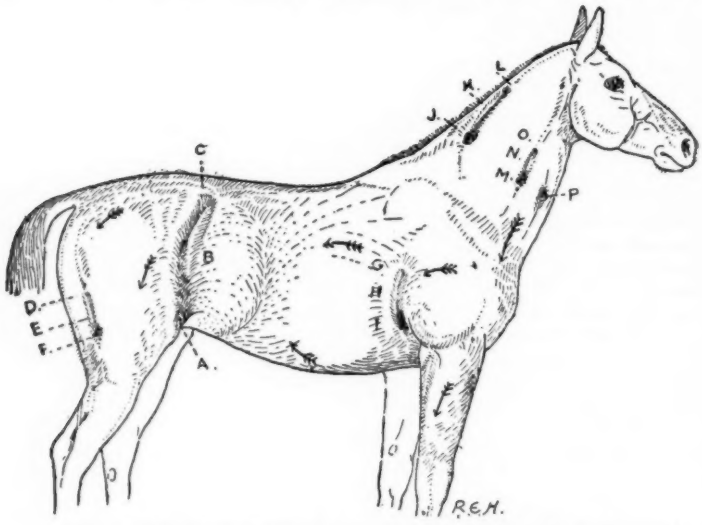

FIG. 1.—Side view of horse. A, B, C, inguinal whorl, feathering, and crest; D, E, F, gluteal whorl, feathering, and crest (very rare); I, H, G, axillary or post-humeral whorl, feathering, and crest; J, K, L, upper cervical whorl, feathering, and crest; M, N, O, middle cervical whorl, feathering, and crest; P, lower cervical whorl.

forthcoming but that which considers them as by-products of muscular action in a long line of ancestors, and in a very striking way they register the degree and range of this action.

As already stated, the best examples of the phenomena in question, and the greatest number, are to be found on the coat of the domestic horse, and these will first be described. The best known is that graceful feathering which passes upwards in the hollow of the flank, dividing the trunk of the animal from the great rounded mass of muscle of the hind-quarters, and the feathering presents a direction slightly concave forward. It commences at the fold of skin, which passes from the lower part of the abdomen to the hind-limb, by a whorl or vortex of hair. This radiates and expands into a bilateral and symmetrical expansion shaped like the barbs of a feather. The latter proceeds upwards in the inguinal hollow as far as the level of

the iliac crest, where a projection covered by muscles is always to be recognised, and here it abruptly terminates in a ridge or crest. The crest is very noticeable in all domestic horses, and lies parallel with the long axis of the trunk. Above it, and on either side of it, are seen the hair streams from the back of the animal, breaking away like two currents of water on either side of an outstanding rock, the anterior stream passing with a wide curve forwards and downwards along the side of the abdomen, and the hinder one more directly in its original course along the great swelling mass of the hind-quarters. A better idea of the actual arrangements of the hair-streams will be gathered from an inspection of the coat of any common horse, whose

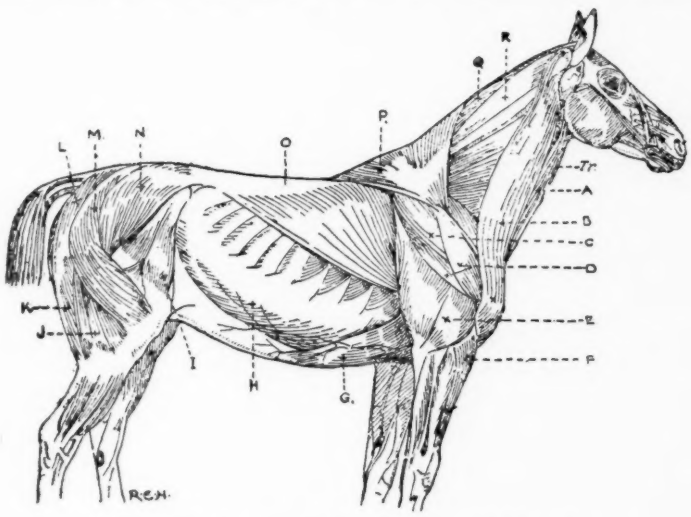

FIG. 2.—Side view of horse, showing chief superficial muscles.

coat is not too long, than can be conveyed by a written description. The symmetry and constancy of this arrangement is very striking, and demands explanation. This is more fully treated in (1), (2), (3),[1] and it may be shortly stated that these breaks in the uniform direction of the hairy covering of the horse, and other animals, as well as in other regions of their bodies than the inguinal, are due to the constant traction, during exercise, of underlying and diverging muscles. It is here maintained that they fairly bear the name of pedometers because of the close way in which the degree of locomotive activity is registered according to the persistence, size, and constancy of these otherwise uncalled-for arrangements of hair. When a few horses in the act of trotting are watched, and the accompanying diagram of the main muscles of the horse and the commonest whorls, featherings, and crests are borne in mind, it is seen at once that the very conditions required to produce some departure from the ordinary slope of the hairs in

[1] (1) *Proc. Zool. Soc. Lond.*, 1900, p. 682. (2) "Use-inheritance": A. & C. Black, London, 1901. (3) *Proc. Zool. Soc. Lond.*, 1902, p. 156.

the inguinal hollow are present, if indeed it be a possibility that underlying divergent muscular traction should influence the course of the living growing stream of hair on that portion of the skin which lies over the area affected. If also a few horses be watched as to the degree and extent of the "jolt" which occurs at every quick step, and the sharp limitation of this to the area included in that of the whorl, feathering and crest—ceasing, as it does, abruptly and significantly at the level of the crest of the ileum —the *modus operandi* is very clear. The forward range of the "jolt" is much wider than the backward, and marks out most closely the degree of the forward curve taken by the anterior hair-stream, which descends from the crest. In passing, one may note here a very small and unimportant point, but one which is of some interest. During or after a short shower of rain the flank of a horse presents a curious distribution of the moisture. At a point just where the proper forward stream from the feathering joins the main stream of hair from the thorax and abdomen, a definite line of darker moist hair is seen, and the moist surface is confined closely to the anterior part of the trunk, and separated from that of the hollow of the flank. This line of demarcation very clearly indicates the position where the forward "jolt" in rapid action terminates.

For the production of these and kindred peculiarities in other animals, no other than this dynamical explanation is forthcoming, and no other seems to be required. The arrangements of hair described is the best, because the most familiar, of the pedometers displayed by animals on their bodies.

Attention to the facts of the horse's life and certain related or contrasted facts of the lives of other animals will show the reasons for which such hair-arrangements are looked upon as registers of long-past and present activities of the species in question. The domestic horse is the most locomotive of animals, wild or domesticated. It has been produced by man out of a wild plastic stock, with some such ancestors as the wild (Prejevalsky's) horses now at the Zoological Society's Gardens, and by a process of selection during many generations, first in its Central Asian cradle, and later all over the civilised world. It has been as much made by man for his purposes of locomotion, draught, and traffic, as a locomotive engine has been made by him. The one has been made by the laws of applied physics, and the other by those of biology. Thus the domestic horse is in the unique position of being the locomotive animal *par excellence*, and that not for its own needs, but for those of higher creatures who have availed themselves of its potentialities provided by nature. These considerations show the domestic horse to be the best specimen which can be found for the study of animal pedometers, and by comparison of this species with all other known hairy mammals it is found to be as much better furnished with pedometers of the kind indicated as it is greatly in advance of them as to the frequency and rate of its locomotive activity.

There are two closely related animals, the domestic ass and mule, which ought to show this inguinal pedometer, if mere heredity or some variation incidental to the group of animals could be fairly invoked to account for it. These also are locomotive animals, but in a degree very much less than the horse, and their pace is of a quieter and less free character. What then do we find in them as to the size and persistence of the inguinal pedometer? In the ass it is absent (the writer has met with one exception), and in the mule it is variable, and occupies less

than half the area of that in the horse. These facts agree very closely with the hybrid character of the mule, and with the differing locomotive activities of horse, mule, and ass. Prejevalsky's horses show a whorl and feathering of an oval shape and limited size, very much like that of the mule. The onager (*Equus onager*), closely resembling these three domestic animals in form, shows an inguinal whorl of pedometer large and well defined, though much less so than in the case of the horse, which is in keeping with its character for remarkable fleetness and activity. Zebras of the three forms, Mountain, Grevy's and Burchell's zebras show no whorl here at all, in spite of their close resemblance in size and form and *power*

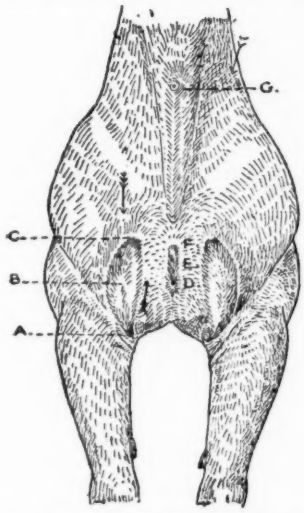

FIG. 3.—Front view of horse's chest, showing the whorls, featherings, and crests.

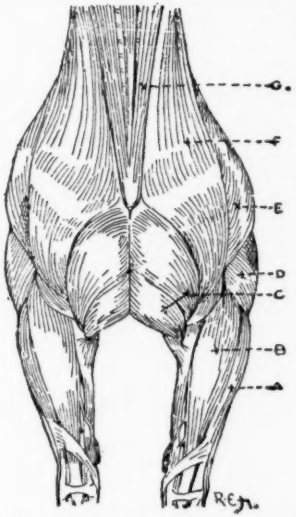

FIG. 4.—Front view of superficial muscles of horse's chest.

of locomotion to the horse. Their wild lives, lived only for their own sake and not for that of man, have been only locomotive in the intermittent way which is incidental to all wild life.

The domestic ox and most of the Bovidæ show no inguinal whorl, and in the case of the former we can explain, from our knowlege of its slowly-moving action and general heaviness, this negative fact.

Among the Bovidæ certain antelopes, gazelles, and sheep exhibit a more or less defined inguinal pedometer, and these are given in more detail elsewhere.[1]

The special instance of an animal pedometer, which has been described at some length, will serve to illustrate others less well known, and among these, as one would expect, the greater numbers are found in the domestic horse.

Behind the large mass of the muscles of the shoulder, and in a hollow corresponding to the inguinal hollow, there is found just below the withers of

[1] *Proc. Zool. Soc. Lond.*, 1900, p. 686.

some horses a whorl which may be counted among the pedometers of that useful creature. Being not a constant phenomenon it is the more significant from one point of view, for it is evidently a pedometer in process of evolution at the present time. It is never so highly developed or so large as the inguinal, and out of 2159 horses examined it was found to exist in only forty-two cases, or about 2 per cent. In another group of eighty-seven cases in which it existed there were fifty-seven cart-horses, and this singular fact is readily accounted for when one recollects that this hollow is a region where a decidedly less extended range of action occurs than is the case in the inguinal, except in the particular instance of the cart-horse, where it is markedly greater than in any other form. It is sufficient to watch a fine English cart-horse drawing a heavy weight, and to compare with this action even that of the high-stepping hackney, to see at once why the preponderating muscular activity of the cart-horse in this area is stamped upon its hairy covering as a whorl, or pedometer. Here again is the degree of locomotive activity registered by the frequency and size of a whorl and its associated phenomena. This particular post-humeral pedometer is also found in other Ungulates, and the most noticeable specimens are found in the same group of animals as the inguinal whorl, and these are given in detail in the same place.[1]

On the pectoral region of certain animals, among which the Ungulates in general and the horse in particular may be mentioned, there is a bilateral symmetrical whorl with feathering and crest, as a rule, associated. Here, again, is a pedometer which registers the general activity of the species and its ancestors, and the individual range and frequency of movement of the great muscles which flex the "elbow" of the animal. In our familiar show-specimen, the horse, it is invariably present and fully developed, varying only to a slight degree in size in differently developed individuals of this convenient species.

In many wild animals it is present, as in many Bovidæ and a few of the larger Carnivores, but never with the uniformity and degree of development that occurs in the horse. Once more the ass and mule deserve special notice as to the degree in which the pectoral pedometer is displayed by them. In the mule it is small, narrow, nearly always present, in the ass it is very rarely present; indeed, as mentioned above, the present writer has only examined one specimen in which it occurred. The horse has been stated to show the pectoral pedometer invariably, but the importance of this fact does not end with its constancy, for many degrees of its width and length are to be observed, and it is a rule to which no exceptions have been so far found, that the general development of it is in a direct ratio with the action of the horse in question. In cart-horses, powerful carriage horses, and funeral horses it is highly developed, and in shambling ill-bred hackneys, such as one sees in the streets of Italian cities, it is very narrow and ill-developed. Some of these poor specimens, if examined as they approach, as to their pectoral pedometer alone, would be taken for mules, which resemble them most closely in this particular, and indeed in general build as well. It is not necessary to do more than point out the close correspondence of the relative locomotive activities of the horse, ass, and mule, with the degree of development of the pectoral, as was seen in the case of the inguinal pedometer.

In point of importance from the present aspect of them, the pedo-

[1] *Proc. Zool. Soc. Lond.*, 1902, p. 686.

meters in the inguinal, pectoral, and post-humeral regions may be numbered 1, 2, 3.

There are several other situations of the animal body where whorls, featherings, and crests occur, but these three that have been mentioned are the only ones that can be described as pedometers, the others being either due to pressure or being secondary to general muscular activity, as in the sides of the neck, but not being by-products of *locomotive* activity *per se*. The horse, again, is pre-eminent in these other whorls, inasmuch as it presents no fewer than three invariably, and nine frequently.

A few facts concerning these particular whorls, featherings, and crests may be alluded to in conclusion :—

1. They occur in a direct ratio with general muscular development in an animal, and the difference between the size and definition of the whorl of an animal which is large and fat, but not muscular in proportion, and an animal which shows good muscular development, is very significant.

2. They never occur over the middle of one large muscle, and only where groups of muscles underlying the part exercise traction in opposing directions.

3. They never occur in Carnivores; though here it may be said *exceptio probat regulam*, for two out of the vast numbers of Carnivores examined, viz., two long-bodied domestic dogs of the dachund type, with very strong fore-quarters, showed a rudimentary post-humeral whorl.

It may prevent misconception to state here that the term "pedometer" is used loosely, and chiefly by way of illustration, but that it is faithful to the facts, which are of a simple order, and open to the study of all whom they may concern.

A BILL INTITULED "AN ACT FOR THE BETTER PREVENTION OF CORRUPTION," 1903.[1]

Be it enacted by the King's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows :—

(1.) If any agent corruptly accepts or obtains, or agrees to accept or attempts to obtain, from any person for himself or for any other person, any gift or consideration as an inducement or reward for doing or forbearing to do, or for having done or forborne to do, any act in relation to his principal's business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's business; or

If any person corruptly gives or offers any gift or consideration to any agent as an inducement or reward for doing or forbearing to do, or for having done or forborne to do, any act in relation to his principal's business, or for showing or forbearing to show favour or disfavour to any person in relation to his principal's business; or

If any person knowingly gives to any agent any receipt, account, or other document in respect of which the principal is interested, and which contains any statement which is false or

[1] See Editorial Article, p. 301.

erroneous, or defective in any important particular, and which to his knowledge is intended to mislead the principal,

he shall be guilty of a misdemeanour, and shall be liable on conviction on indictment to imprisonment, with or without hard labour, for a term not exceeding two years, or to a fine not exceeding five hundred pounds, or to both such imprisonment and such fine, or on summary conviction to imprisonment, with or without hard labour, for a term not exceeding four months, or to a fine not exceeding fifty pounds, or to both such imprisonment and such fine.

(2.) For the purposes of this Act the expression "consideration" includes valuable consideration of any kind; the expression "agent" includes any person employed by or acting for another; and the expression "principal" includes an employer.

(3.) A person serving under the Crown is an agent within the meaning of this Act.

(4.) In any prosecution under this Act, evidence shall not be admissible to show that any such gift or consideration as is mentioned in this section is customary in any trade or calling.

(5.) For the purposes of this Act, where it is shown that any such gift or consideration as in this section mentioned has been taken, given, or offered without the assent of the principal, the burden of proving that such gift or consideration was not taken, given, or offered corruptly shall lie on the accused.

A MATTER FOR THE WAR OFFICE.

About Moss-Litter—A Thriving Industry of interest to all Horse Owners.

So much has been written of late as to the dormant wealth of the enormous tracts of bog in the British Isles that inquiries have been made as to its possibilities and probabilities, and it is found that large tracts of bogland have been worked in England for the past fifteen years, and that the products have been, and are being, placed on the market as moss-litter, principally for bedding for horses; and with considerable success, as is proved by present Stock Exchange quotations of moss-litter shares. Almost without exception, the large horse-owning companies use moss-litter, and speak highly in its favour as a bedding, from both an economical and health standpoint. The first cost, as compared with straw, is only about half to one-third; at the same time, in practice, one ton of moss-litter goes twice as far as one ton of straw; so that, from an economical point of view, its advantages are indisputable. As a healthy bedding, the superiority of moss-litter over straw would also seem to be very great. We are told it is a natural disinfector, deodoriser, and fixer of ammonia—all strong points in the matter of bedding; for whoever goes into a straw stable when the doors have been first opened in a morning will be almost overcome with the strong odour emitted. If we imagine standing all night in such an atmosphere, its ill effects on the horses will be at once apparent. It is claimed that this is entirely avoided in stables where moss-litter is used. Again, drains are always a source of serious danger; but they may be hermetically sealed where moss-litter is adopted, as one of the peculiar qualities is its very absorbent nature; it will take up ten times its own

weight in moisture, and the moisture is fixed in one small spot. As soon as it has fallen this only requires picking out in the morning, and there is at once a dry bed again, whereas in the case of straw the wet travels all over the bed, and to get a dry bed again the waste is enormous.

Horses on a straw bed frequently eat their beds, and in doing so invariably contract colic; but they do not eat a moss-litter bed. It has been demonstrated that horses who have been accustomed to both moss-litter and straw beds, if set at liberty in a stable with open stalls, laid down, some with moss-litter and some with straw, will, without exception, select the moss-litter bed—another proof that moss-litter is the most comfortable bed of the two. Again, horses do not become stained on a moss-litter bed as they do on straw—a point which will appeal to the owners of white or grey horses.

One would naturally suppose that the British Army would have taken advantage of this cheap and healthy bedding for their horses. The ways of the War Office, however, are not the ways of industrial companies, though an exception must be made of Gibraltar in this matter; but, if suitable at Gibraltar, surely it must be suitable at home. This appears to be one more case of War Office indifference in spending the public funds. It is declared that the Army could save at least £1 per horse per year in a normal straw year; and on 50,000 horses, which we believe they now have, £50,000 per annum could be saved on their bedding alone. Moss-litter is used in many of the Continental Army stables. A point to note is that a large number of officers use moss-litter for their own valuable private horses, and yet it is not considered good enough for the cavalry and artillery horses. At the same time, the horses which the Army have subsidised in the stables of the London General Omnibus Company, the London Road-Car Company, the London County Council, &c., stand on moss-litter year in and year out, so that the authorities must approve of it as a bedding. The question of manure cannot be one that affects the decision of the War Office authorities in this matter, inasmuch as it is understood that the contractor for the bedding is compelled, under the contract, to remove the manure. Nevertheless, moss-litter is credited with producing a thirty per cent. better manure than straw. Is it too much to hope that the War Office will face this and other matters in a commercial spirit, and show to the nation that the public money is being spent in the best interests of the nation?

ROUP IN POULTRY: ITS CAUSE AND CURE.

THERE are few more troublesome ailments among fowls than that popularly known as roup, a disease which frequently plays sad havoc with whole flocks of birds, and which is occasionally very prevalent in some districts. At one time roup was commonly regarded as a severe form of cold or catarrh, but recent investigation has gone to show that, like so many other live stock ailments, it is due to the work of a germ or microbe. The disease in its various aspects formed the subject of an interesting inquiry recently conducted at the Ontario Agricultural College by Professor Harrison, who has just given publicity to a bulletin descriptive of the results of his investigation. Assisted by Dr. Streit, Professor Harrison examined and dealt with over 300 diseased birds, so that he had oppor-

tunities of making a very careful study of the causes and character of the ailment. Describing the characteristics of the disease Professor Harrison writes :—After the first symptoms of the disease, which is usually a putrid catarrh from the nostrils, the affected fowl is generally restless, separates from other members of the flock, becomes dull, cowers or mopes in the corner of the pen, with its head drawn close to its body, and often covered with its wings. If there is a severe discharge from the nostrils or eyes, then the feathers upon the wings or back are likely to be smeared with it, stick together, and after some time fall out ; the eyes are often shut, the lids being glued together by a sticky discharge from them. An affected fowl frequently rouses itself, takes food, and especially water, and then returns to the apathetic condition. As the disease progresses, tumours or cheesy masses may be formed about the eyes, or in the nasal passages, and in the mouth or throat there are frequently greyish yellow exudations. Whether the disease is characterised by offensive discharge, cheesy masses, or false membrane in the throat, the cause is always the same.

After a great many attempts, Professor Harrison and Dr. Streit succeeded in isolating a germ which causes roup. They also set up the disease in healthy fowl by inoculating them with the ordinary green pus germ ; hence it would seem that roup is a complex suppurative process. Treatment of the disease is only recommended when the birds are valuable. In such cases the nostrils are pressed between the thumb and forefinger in the direction of the beak, two or three times. Pressure should also be applied between nostrils and eyes in an upward direction. This massage helps to loosen the discharge in the nostrils and eyes. The bird's head is then plunged into a two per cent. solution of permanganate of potash for twenty or thirty seconds, or as long as the bird can tolerate it. This treatment should be given twice a day, and continued until all symptoms have disappeared.

(Farmers' Gazette.)

TROPICAL DISEASES OF ARMY ANIMALS.

BY COLEMAN NOCKOLDS, VETERINARY SURGEON, 1ST UNITED STATES CAVALRY.

MR. NOCKOLDS sends a report of his experience during the Spanish War from Batangos, Philippine Islands, and makes the following remarks :—

Tetanus.—Occurs more frequently than in the United States. Many horses and mules are attacked by a mild form of this disease, and often recover in from six days to two months.

Periodic Ophthalmia.—Mr. Nockolds thinks that it is contagious, and that at least 80 per cent. of the native ponies suffer from it. Most of the American horses were sound in the eyes when they left the States, but in the Philippines the loss was great. The author thinks that the glare of the electric light on board transport ships, and the heat and dust, may have exercised some predisposing cause.

The *Spiroptera megastoma*, *Ascaris megalocephala*, *Oxyuris curvula*, *Oxyuris masteyodes*, *Sclerostoma equinum*, and *Filaria papillosa* are common. The *Spiroptera microstoma* has been found in large numbers in the stomachs of animals affected with "surra." The *Teniæ* appear to be rare, not one having been noticed in nearly 200 autopsies. Bots also are not as common as in the States.

Thrush appears to be prevalent in the wet season.

Glanders.—The American force seem to have had an experience of this disease, and it is interesting to note that Mr. Nockolds says:—"I may state that in my opinion glanders was brought here by American animals. This coincides with our experience during the South African War, although at the time a great outcry was raised when it was suggested that the disease existed in America. We believe that out of one shipment of horses from North America at the conclusion of the War nearly 20 per cent. reacted to mallein and were destroyed, the correctness of the diagnosis being confirmed by post-mortem examination."

Surra has caused great loss, and the author says that he thinks it has been greater in the Philippines than any other country. It is noteworthy that it is not a native disease of the islands, and he brings forward evidence to show that it has only been known during the past three years, the first case being seen by him in January 1901. It also seems to be confined to certain localities. A symptom mentioned by Mr. Nockolds is opacity of the cornea and total blindness, but this we have not noticed in India.

(*Journal of the Military Service Institution, United States*, March and April 1903.

To our Readers.

Being fully aware that a thorough knowledge of all the diseases of Mammary Glands is of vital importance to human beings, we have obtained the plates and copyright of this admirable work, and Veterinary-Lieut.-Colonel Nunn has kindly undertaken its translation into English. We published the first portion in June 1902, and shall continue to publish it in monthly parts, and afterwards in book form.

DISEASES OF THE MAMMARY GLAND.

BY P. LEBLANC, LYONS VETERINARY COLLEGE—TRANSLATED BY VET.-LIEUT.-COLONEL NUNN, A.V.D., F.R.C.V.S., ETC.

(*Continued from page* 295.)

Diagnosis.—In this there should be no difficulty. The general symptoms—appearances of the mammæ and changes in the secretion of the milk—are so marked that a mistake should be impossible; furthermore, the whole gland is involved, which is not the case in catarrhal mastitis.

Prognosis.—This is always bad. When the disease runs its course without complications induration is the usual result, with total loss of power of secretion in the quarter, and even if the others do not participate the quantity of milk is diminished for a long time. Abscess and gangrene of the udder are also common sequelæ.

Treatment.—The general comfort of the animal should be attended to. The patient should be removed and placed in a comfortable warm corner of the stable, and rubbed down to excite the

action of the skin. The disarrangements of the digestive system are combated with ipecacuanha, coffee, and tartar emetic. When the movements of the rumen are established, a saline purgative and enemas will assist their action and the elimination of their contents, but in many cases purgatives are objected to as they diminish the quantity of milk, and in this event an emollient diet must be relied upon.

The administration of repeated small doses of nitrate of potash is indicated, as it has a quasi-local action in causing the pathological products absorbed from the mammæ to be eliminated in the urine. The gland must be emptied several times daily, as in the case of catarrhal mammitis.

There are many lines of local treatment advocated, over which there is much dispute, and there is scarcely another disease in which more widely different lines have each in its turn been lauded by those practising them, viz., *astringent*, *emollient*, *irritant*, *revulsive*, and *sedative*. With all due difference to many eminent practitioners who have advocated them, we are of opinion that *vesicants*, *revulsives*, and *irritants* should be rejected, as they only tend to increase the inflammatory process and accompanying pain without in any way modifying the resulting lesions.

In the earlier stages astringents are indicated, such as vinegar and chalk, or a fomentation with warm vinegar, a solution of sulphate of iron, white of egg, sulphate of alumina and potash (Lecoq); collodion (Guillibert and Zundel); benzoic acid 1 part, tannin 5, and collodion 50 (Burri).

After this stage emollients should be employed, as they prevent the formation of abscesses, allay pain, assist absorption of exudation, and lower the temperature of the part. Linseed meal poultices are most useful; they no doubt are somewhat difficult to keep in position, but their good effects compensate for the trouble. If the pain is very great the addition of opium to the poultice will be useful. Williams, of Edinburgh, recommends a poultice of spent hops. He says, "These poultices are light, retain a large amount of water, and when necessary are easily changed. They are very soothing, and even when dry are not irritating." The older writers set great value on a suspensory bandage, and there is the advantage that it is easy to introduce any application between it and the mammæ.

Steaming either with hot water or medicated steam has been advocated, but is not to be recommended, and when it is impossible to apply a poultice an emollient ointment is to be preferred, such as camphor ointment (Hertwig), green soap and extract of belladonna (Rychner), extract of hyoscyamus or iodide of potassium are all used in different forms, but whichever is selected it must be applied with continued massage, and be carried out systematically and regularly. The following are some of the best emollient formulæ :—

Nitrate of potash,	-	-	-	1 part.
Water,	-	-	-	2 parts.
Olive oil,	-	-	-	5 „

RYCHNER.

Make into an emulsion, and add 4 parts water.

Berdey recommends—

Blue mercurial ointmeal,	-	-	5 parts.
Soft soap, Lard, } aa.		-	100 „
Wood tar,	-	-	q.s.

Apply two or three times per diem.[1]

De Bruin recommends oxide of zinc and camphor ointment.[2]

Detchevers[3] had great results with subcutaneous injections of veratrine in bad cases of mastitis, with a temperature of 104° F. His formulæ is—

Veratrine,	-	-	40 cc.
Alcohol,	-	-	q.s. several minims.
Distilled water,		-	10 grammes.

But in all cases of parenchymatous mastitis antiseptic injections into the teat are not only useless but harmful.

If formation of an abscess is suspected, nothing can supersede a linseed meal poultice, which should be changed frequently.

Resolvents such as camphorated ammonia, liniment, or a mixture of blistering or mercurial ointment, have been recommended by Saint Cyr, and Violet. Baumenter and Rueff use the following :—

Hyoscyamus succus,	-	-	8 parts.
Liquor ammonia,	-	-	2 „
Camphor,	-	-	1 part.

But notwithstanding this high authority the formulæ does not seem so efficacious as a poultice.

When pus has formed it must be evacuated, or else the healthy parts of the gland will be lost, but care must be taken, as cases of fatal hæmorrhage are not unknown when the operation is performed carelessly.

The cavity should be explored with the finger, the fibrous bands and pockets broken down, and as a rule a mass of sequestrum will be found retained in its place by the vessels. This must be broken down and extracted, the cavity being well douched with an antiseptic solution for the next few days, when, if the case goes on right, it will be found to close up rapidly. It is necessary to

[1] Hess. Monatschrifte f. prakt. Thierheil. xi. page 211, 1900.
[2] De Bruin. Tydschr. voni veartser, 1889-1900, page 167.
[3] Detchevers. Hypodermic injection of veratrine in the treatment of mastitis. Progrès Vétérinaire, 1895.

guard against the re-formation of the abscess, and not to forget that there may be secondary ones, which must be carefully looked for.

If gangrene has set in, the sloughing portion should be removed as quickly as possible, and in those severe cases where the whole gland is involved amputation should be at once performed. This has been successfully done by Flandrin, Hahm, Munch, Kohl, 1893;[1] Encke, 1893;[2] Deupser, 1891;[3] Schultz, 1890;[4] Hendrick, 1890.[5] Schultz and Encke's operations have only been performed on one quarter, but in the others the whole gland has been removed.

The operation, although it sounds very alarming, is not, in the hands of an expert operator, so very difficult to perform, if the arrangement of the vascular system of the mammæ is remembered. In front of it, seeming to arise from the two anterior quarters, are the *subcutaneous abdominal* or milk veins. They rise anteriorly along the abdomen on each side of the linea alba, and enter the chest through these openings. They are accompanied by an artery and a nerve.

The two *perineal veins* arise from the posterior quarters running up each side of the perineum just under the skin; they are easily dissected out and ligatured.

The true nutrient artery is the *external pudic* with the accompanying vein, nerve, and a large lymphatic, which enter at the postero-external portion of the posterior quarters: the artery is a large one, even in health, but it increases in size if the gland is diseased. The mammæ is attached to the abdomen by means of these vessels and two fibro-elastic ligaments, which arise from the centre of its base and are inserted into the abdominal wall. The attachment is completed by a large amount of loose connective tissue.

The patient should be thrown and turned on her back, the hind limbs being firmly secured, and the thighs slightly separated. After the region has been carefully washed and disinfected two incisions are made on each side of the teats, which join before and behind, so as to include them in an elliptical flap, "en cote de melon." The line of the incision should be carried up close to the base of the teat, so as to preserve as much skin as possible.

The skin should be dissected away from each side of the gland and the subcutaneous abdominal and perineal arteries and veins tied. The connective tissue can be broken down with the finger, assisted by a few strokes with a probe-pointed bistoury. The pudic artery when exposed is ligatured in two places, and divide it between them, so as to avoid reflux hæmorrhage from the gland. The anterior part now being free, raise it up and draw it backwards between the hind legs, dividing the suspensory ligaments as near as

[1] Kohl. Berlin. Thierarzt Wochensch. 1893.
[2] Encke. Necrose eines Euterviertels, Berlin Archiv. xix. 319.
[3] Deupser. Berlin. Thierarzt Wochensch. 1891, No. 14.
[4] Schultz. Berlin. Thierarzt Wochensch. 1896.
[5] Hendrick. Ann. de médecine vét., 1899, page 587.

possible to it when the operation is complete. With proper precaution and skill on the part of the surgeon it should be done quickly and with comparatively little loss of blood.

The resulting wound is large, but it should not cause alarm. When the gland is removed the thighs should be brought together to remove tension on the flank and the skin-flaps brought into apposition and sutured, remembering to allow for drainage. According to Deupser resolution should take place in two months, and to Hendrick in six weeks. This latter author remarks that the expense and trouble will be recouped by the fact that a case that was valueless will fatten and make a good carcase for the butcher.[1]

CONTAGIOUS MASTITIS IN THE COW, DIFFERING FROM STREPTOCOCCIC MASTITIS.

In this chapter it is proposed to discuss certain observations on various forms of parenchymatous or catarrhal mastitis which appear to be contagious, but which it is impossible to classify with the streptococcic form either on account of there having been no bacteriological examinations made, or that it has been proved to be due to a different organism.

Dieckeroff in 1877 described a form of mastitis, characterised by rapidly forming tumefaction of one or more of the teats, with great alteration in the milk. Heifers, milch cows, and those in calf were all attacked; there were in many cases premonitory symptoms, such as rigors, loss of appetite, and slight fever. A case was seen in a nine months' old calf.

In most cases the lesions did not extend beyond the sinus, but in others the whole gland was involved, and the attack lasted several months. Death very rarely took place, but the formation of an abscess was the rule.

On post-mortem examination the canals were found to be full of caseous masses, the walls of the sinuses thickened, and sometimes covered with small tumours. The glandular structure had undergone considerable atrophy and was replaced by fibrous tissue. Dieckeroff was at this time of opinion that the disease was due to local infection, and that it disappeared in the summer when the animals were turned out to grass. He thought that it was due to a specific ferment which caused the milk to coagulate in the sinuses and undergo decomposition, giving rise to irritation and its results; he also considered that inoculation took place either through the hand of the milker or by lying down. From the farm where the outbreak had commenced it was conveyed to a neighbouring one, where five out of nine cows were attacked, and from that to two others by a person who had been called in to value the stock.

[1] Hendrick. Total ablation of the Mammæ in a Cow. Ann. de méd. vét., 1899, page 587.

The treatment adopted consisted in the injection into the teats of a solution of carbolic or salicylic acids or permanganate of potash, together with the usual sanitary precautions.

Outbreaks take place annually. When first noticed in 1873 nine animals were attacked, from March to September 1884 eight, in 1875 there were only a few isolated cases, but in 1876 it appeared in the winter and continued till the following autumn, during which time 140 animals suffered, some of them two and three times, and during the winter of 1876-77 there were several fresh cases. The history of this outbreak is important as it is proof of the extension of the disease.[1]

The epidemic which raged in the Duchy of Oldenbourg spread to the surrounding country, especially in the principality of Eutin.

Zurn relates the history of an outbreak in which 140 out of 180 cows were affected. The disease manifested itself without any premonitory symptoms beyond slight local heat of the part; there was no pain during milking, but the milk had turned into a serous, grumous purulent fluid, and of a yellow or white colour. In some rare cases it was followed by general malaise, loss of appetite, and stiffness of the joints.

In it the author found micrococci, filaments of mycotrix spores of muco-mucedo and cells resembling those of beer yeast. The disease could be propagated to the ewe and sow.[2]

Some years afterwards Dieckeroff witnessed another epidemic of mastitis in a large dairy. The disease was highly contagious, and was concurrent with lesions of the generative system. Various lines of treatment were adopted, and failed, only complete isolation had any effect in stopping it. Reimers reported an infectious inflammation of the udder of cows at grass that is very prevalent in Schleswig-Holstein. There are both systematic and local complications. but as a rule recovery takes place.[3]

Faletti has observed among cows in the valley of Aoste in Northern Italy, in addition to tuberculous mastitis and the streptococcic of Nocard and Mollerraa a third form, which is but little known. It attacks cows at any period they are in milk, the udder becoming hard, hot, and painful. The milk drawn off is serous, of a pink colour, alkaline reaction, and contains clots of caseine.

Microscopic examination shows a small micrococcus either isolated or in pairs, which readily stain with methyl blue. The case generally terminates in induration of the gland, and treatment as a rule is not successful, although in some cases, when taken in the very earliest stages, injection of a solution of boracic acid has had favourable results.[4]

Thiele relates an epidemic of mastitis attacking 48 cows out

[1] Dieckeroff. Infectious Mammitis. Deutsche Zeitsch. f. Thiermed., 1877, page 381.
[2] Zurn. Contagious Diseases of the Udder of the Cow. Deutsche Zeitsch. von Bollinger und Franck, Bd. III.
[3] Reimers. Berlin Thierarzt. Wochensch., S. 18, 5.
[4] Faletti. Giornale della R. Soc. Vet. Ital., No. du 15th Jan. 1898.

of 93. Seven died and the others, having lost the udder, were sold to the butcher. The disease appeared suddenly with considerable swelling of the gland, fever, and systemic disturbance. The secretion of milk was almost altogether suspended, and the small quantity given was caseous, bloody, purulent, and fœtid. No treatment was of any avail, but strict isolation saved half of the stock.[1]

Anderson relates as a curious fact that out of 14 cows in one shed 13 were attacked in one day, the disease commencing with rigors, which were succeeded by partial paralysis.

The temperature varied between 102 and 105° F., and the pulse from 96 to 112°. In 10 of the patients the anterior quarters were attacked. The whole udder was hot, painful, and somewhat swollen, the secretion diminished, and consisting of serum, with flocculi floating about in it. After three or four days the animals began to recover and the appetite to return. In four cases there were articular complications, but eventually all recovered.[2]

This last case in all probability was one of streptococcic mastitis.

GANGRENOUS MAMMITIS IN THE EWE

Gangrenous mastitis in the ewe is a toxic infectious disease due to development in the galactophoric sinus of a micrococcus, studied and isolated for the first time by Nocard in 1887. The disease is known in France by shepherds and others as *mal de pis*, *araignee* and *cru*,[3] and is well-known in those localities in which milking ewes are kept. In Larzac it destroys numbers every year, and is the curse of those flockmasters who use the milk for cheese. The disease was first described by d'Arboval in 1823, again by Lafosse in 1856,[4] and in 1886 by M. Nocard at Joinville and Larzac. It is common in flocks around Paris, and M. Cagny calculates that annually 2 to 10 per cent of the ewes are attacked after lambing.

In other countries the disease was observed in 1889 by Esser, in the neighbourhood of Göttingen. The attention of the shepherd would be attracted by the ewes not allowing the lambs to suck, moving as if in pain, and dragging their hind limbs. Half the ewes would be attacked in from twelve to fourteen hours, and they died in three to four days.[5]

Etiology.—It is due to a very small micrococcus in the galactopherous sinus, which has been isolated and studied by Nocard. These may be single or in colonies, and colour with any aniline stain, especially Weigert and Gram. In both it develops rapidly, so much so that in twenty-four hours the medium is almost milky. After

[1] Thiele. Deutsche Zeitsch. Presse, 1898, No. 47.
[2] Anderson. Enzootic Mastitis. Schwed Tidschv. f. Vet. Med., 1893, Bd. XIII., page 110.
[3] Cagany. Societe Centrale, 1887, page 213.
[4] Lafosse. La Mammitis. Journal des Vét. du Medi., 1856, page 486.
[5] Esser. Seuchenartiges Auftrenten der Brandigen Euterentzundung bei Schafen. Berlin Archiv, S. 133, 3.

forty-eight to seventy-two hours the growth is deposited at the bottom of the tube in a powdery mass with a strong smell.

On gelatine it grows in a yellowish-white film, which it liquefies along its edges. On potatoes it grows very rapidly, coagulates milk and turns it acid.

Injected into the sinus of the ewe a pure culture causes exactly the same manifestations as the spontaneously acquired disease, but is inert with the goat. This animal, however, is subject to a form of gangrenous mastitis that runs exactly the same course and with the same symptoms as the ewe, and in which is found an identical organism. It appears certain that the one found by the author and Mathis in the goat is identical with that of Nocard.

It is inert in the other domestic animals, but injected subcutaneously in the rabbit gave rise to a local swelling, which rapidly ran on into an abscess in which the organism was found.

The organism appears not to be limited to local reaction only, but gives rise to toxins that act on the system generally.[1]

Symptoms.—The disease commences with local and general symptoms, which are developed simultaneously.

The mammæ is swollen, hot, and painful, and in the earlier stages the milk becomes yellow, "the colour of beer," shortly afterwards changing to red.

These symptoms are in a few hours followed by the appearance on the skin of the gland of irregularly shaped red patches of different sizes that change to a violet-purple and black colour. Over these patches the skin mortifies, becoming cold and insensible with subcutaneous crepitation. In the same degree as the gangrene extends so does the mammæ shrink up and the local symptoms increase.

At the commencement of the attack the temperature is above normal, but it falls to 97° F. and the symptoms of poisoning increase. The patient remains constantly down, grinding the teeth, and rigors set in, death rapidly taking place in from two to four days. In those infrequent cases in which recovery takes place, there are open suppurating sores on the mammæ that appear to be very indolent, and take a long time healing up. The milk is lost, and it is difficult to fatten the animal for the butcher.

Pathology.—The skin is infiltrated and the connective tissue œdematous, containing gas and fœtid serum. The sinus is empty, but usually contains several dry red clots in which micrococci abound. The mucous membranes are red, the gland is necrosed, and when incised resembles cooked meat or a piece of hard white cheese riddled with collections of pus.

Gangrenous mastitis from a histological point of view is of the same nature as epithelial. In certain localities there is complete

[1] Quite recently Roger and Garnier have isolated from the human female an organism that closely resembles that of Nocard. It gives rise to subcutaneous suppuration like it in the rabbit and guinea-pig. It stains in the same manner and there is but little difference in its growth.

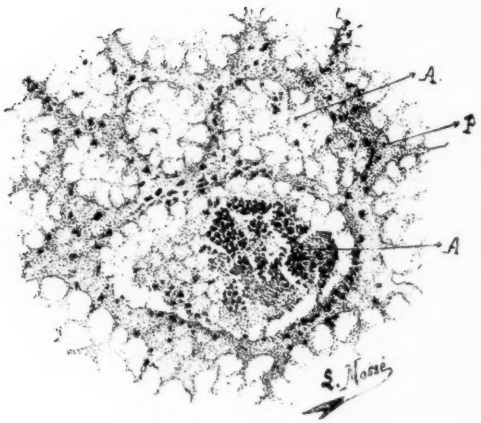

FIG. 21.—Gangrenous mastitis of the ewe. High power.
A, acini; P, wall slightly infiltrated.

obstruction of the cells, only the basement membrane remaining intact, and even this may be infiltrated or even destroyed.—(Fig. 21.)

The supramammary ganglia are infiltrated and contain the pathogenic organism. There is muscular atrophy and patches of ecchymoses under the endocardium.

Diagnosis.—The diagnosis is easy. The gravity of the general symptoms and the local gangrene should not leave any doubt in the mind of the practitioner, together with the fact that there is no other disease amongst sheep that at all resembles it.

Prognosis.—If not attended to in its very earliest stages it is almost always fatal, and when once cutaneous gangrene has supervened no treatment is of any use.

Treatment.—This is chiefly prophylactic, consisting of isolation of the diseased and disinfection of the place they have been in. When taken at the outbreak the skin over the udder should be freely incised and the wounds dressed with powdered sulphate of copper, iodoform, tar, cresyl, or some like agent. M. Nocard has used as an injection into the sinus various antiseptics, such as boracic acid, 4 per cent.; corrosive sublimate, 1 to 2½ per cent.; iodine, 1 to 2 per eent.; sulphate of copper, 2 to 4 per cent.; and carbolic acid, 2 to 3 per cent, without result.

Legal Notes.

By Guy H. Guillum Scott, of the Inner Temple, Barrister-at-Law.

COURT OF APPEAL.

(Before the Master of the Rolls, Lord Justice Stirling, and Lord Justice Mathew.)

CLARK *v.* RANDALL AND OTHERS.

The arguments in this case were continued to-day. It was an application by the defendants for judgment or a new trial in an action tried before Mr. Justice Grantham and a special jury, reported in *The Times* of December 17 last. The action was brought for the recovery of a mare or her value, and for damages for detaining the mare, and for wrongfully depriving the plaintiff of her. The plaintiff's contention was that he had bought the mare in question, Miss Bryant, for 175 guineas, when she was sold by auction after a selling race, which she won at the Redcar First Summer Meeting, May 19, 1902. The defendants were Mr. Randall, the owner of the mare, Mr. Sadler, the trainer, and Mr. Wetherell, the auctioneer; and their defence was that the mare had been put up a second time for sale by auction by direction of the stewards of the meeting, on the ground that Mr. Poole, who was the owner of the horse that came in second in the race, and who was bidding on behalf of Mr. Randall, had also bid 175 guineas, which bid the auctioneer did not notice, there being thus a *bona fide* dispute as to two bids; and that at the second auction the mare was bought by Mr. Randall for 330 guineas. The main question was whether

the stewards had any power under the rules of racing to order the mare to be put up a second time for sale by auction. There was also a further point whether there was any memorandum in writing sufficient to satisfy Section 4 of the Sale of Goods Act, 1893.

The jury, in the Court below, found a verdict for the plaintiff, and assessed the damages at £262 : 15s.

Mr. Blake Odgers, K.C., and Mr. A. H. Spokes appeared for the defendants Randall and Sadler; Mr. Manisty, K.C., Mr. G. H. Stutfield, and Mr. W. N. Cochrane for the defendant Wetherell; and Mr. S. T. Evans, K.C., and Mr. E. Shortt appeared for the plaintiff.

Mr. Blake Odgers, for the defendants Randall and Sadler, said that his first point was that, under the rules of racing, the stewards had power, where there was a *bona fide* mistake, to direct a horse to be put up for sale a second time. The Redcar meeting was held under the rules of the Jockey Club. By rule 7 of the rules of racing "the stewards of a meeting have full power to make (and if necessary to vary) all such arrangements for the conduct of the meeting as they think fit. . . ." By rule 12, "the stewards have power to determine all questions arising in reference to racing at the meeting, subject to appeal under Part XXIII., and, should no decision have been arrived at by the stewards within seven days of an objection being lodged, the clerk of the course shall then report the case to the stewards of the Jockey Club, who may at their discretion decide the matter, and, if they consider there has been any negligence, may order any additional expense arising therefrom to be defrayed out of the funds of the meeting at which the case occurred." By rule 166 every objection was to be decided by the stewards, but their decision should (if they were not stewards of the Jockey Club) be subject to appeal to the stewards of the Jockey Club in certain circumstances. He submitted that this case came within rule 12 as being a question "arising in reference to racing." The holding of the auction was a condition of the selling race, and therefore the auction had reference to the racing. The stewards, therefore, had power to correct a mistake and to direct the mare to be put up to auction again. The learned counsel was proceeding to refer to the evidence given at the trial when

The Master of the Rolls asked whether the facts were not admitted.

Mr. S. T. Evans, K.C., for the plaintiff, said that he admitted the facts so long as it was clear that the mare was knocked down to the plaintiff, that the auctioneer did not know of any dispute until afterwards, and that the auctioneer, when asked to put the mare up again, said that his functions were over.

Mr. Blake Odgers thereupon said that he would deal with the question arising under the Sale of Goods Act, 1893. He submitted that the memorandum which the auctioneer made upon his racing card was not sufficient, as it did not contain the name of the vendor. For those reasons he contended that judgment should be entered for the defendants.

Mr. Manisty, K.C., for the defendant Wetherell, also argued that judgment should be entered for the defendants.

Mr. Evans for the plaintiff Clark argued that this was an ordinary sale by auction, conferring tha same rights upon those who bid as were conferred at law upon bidders at any ordinary auction. By section 58, subsection 2, of the Sale of Goods Act, 1893, a sale by auction was complete

when the auctioneer announced its completion by the fall of the hammer. In the present case the evidence showed that before the auctioneer knocked down the mare to the plaintiff he looked round to see if any one else made a bid, and seeing none, let fall the hammer. Upon that being done the property in the mare vested in the plaintiff. The *bona fides* of Mr. Clark and of Mr. Wetherell were admitted. The auctioneer was not an official of the meeting. He was not entered on the race card as such, nor was he within the list of officials specified in rule 19 of the rules of racing. By rule 10 the stewards of the meeting had power to regulate and control the conduct of all officials; and by rule 11 the stewards had power to punish at their discretion any person subject to their control with a fine not exceeding 50 sovereigns, and with suspension from acting or riding at the same meeting. It could not have been intended to subject the auctioneer to those punishments. He was not, therefore, subject to the control of the stewards. Even, however, if he was an official, the defendants would be in no better position. By rule 12 the stewards had "power to determine all questions arising in reference to racing at the meeting." Those words could not include such a question as the present. The race was over before the auction. The rule could not refer to the legal rights of the parties arising out of the auction. Therefore the ordinary jurisdiction of the Courts was not ousted and transferred to the stewards of the meeting. If the stewards had no jurisdiction, it was clear that the horse belonged to the plaintiff. Part XXXIII., rules 166-169, which related to disputes, objections, and appeals, did not cover disputes arising out of a sale of a horse by auction. Rule 56, which specified the conditions upon which selling races were to be run and the sale of the winner was to be carried out, did not confer any jurisdiction upon the stewards in regard to the sale by auction. Therefore the stewards had no jurisdiction. The learned counsel further contended that there was a memorandum in writing of the contract sufficient to satisfy section 4, subsection 1, of the Sale of Goods Act, 1893.

Mr. E. SHORTT followed, and Mr. BLAKE ODGERS, K.C., replied.

The Court allowed the application, and ordered judgment to be entered for the defendants.

The MASTER of the ROLLS in the course of his judgment said the question was whether the rules covered this case. The powers of the stewards were contained in a series of rules beginning with rule 7. By rule 10 "the stewards have power to regulate and control the conduct of all officials, and of all trainers, jockeys, grooms and persons attendant on horses." By rule 12, which was the most material rule, "the stewards have dower to determine all questions arising in reference to racing at the meeting, subject to appeal under Part XXIII." Pausing there, that *prima facie* gave the stewards an absolute right to determine all questions in reference to racing at the meeting, subject to appeal. Before dealing with the subsequent part of rule 12, he would refer again to rule 56. All these rules were comprised in a book called the "Rules of Racing." Therefore, rule 56, which provided for the sale, and, if necessary, the resale of a horse winning a selling race, was just as much a rule of racing as those, for instance, which dealt with jockeys in the course of the race. So far, and unless it was qualified by something else, rule 12 gave the stewards power to determine the question whether the auction had been properly conducted under the rules. . . . In his opinion rule 12 was wide enough

to cover the present case. He was not sure, however, that the case was also within rule 10. It was said as against this that the auctioneer was not "an official," and that argument was based on rule 19, which specified certain officials who were to be appointed for each meeting, and it did not specify an auctioneer. The contention was that that rule was exclusive. The answer to that was that that was a provision for the appointment of the officials necessary for every race meeting, but that when a race meeting included a selling race, an auctioneer had to be appointed for that meeting, and he fulfilled certain duties in connection with the races, and was in the position of an official, and, therefore, under the control of the stewards. He did not, however, decide the case upon that ground, but upon the ground that this was a question arising in reference to racing within rule 12, and that consequently the stewards acted within their proper functions in deciding that the first sale was a bad one, and that the mare must be put up for sale by auction again. The application must therefore be allowed, and, as there was no fact in dispute, and the question turned upon the construction of the rules, judgment must be entered for the defendants, with costs.

The LORDS JUSTICES also delivered judgment arriving at the same conclusion, upon the ground that the stewards had powers under the rules to act as they did.

Mr. S. T. EVANS, K.C., asked for a stay of execution, with a view to an appeal to the House of Lords, upon the costs being paid to the defendants' solicitors upon their undertaking to return them if the appeal were successful.

The COURT refused to grant a stay.

The above is an extract of the full report which will be found in *The Times* of May 15th and 16th.

Reviews.

THE CASTRATION OF CRYPTORCHID HORSES AND THE OVARIOTOMY OF TROUBLESOME MARES. By FRED. T. G. HOBDAY, F.R.C.V.S.

In olden days, unless one could write a more or less bulky treatise on some such comprehensive subject as Veterinary Surgery or Veterinary Medicine, one did not think it worth one's while to put in print anything, even although he had made a special study of some portion embraced under the above-mentioned widely inclusive titles; but we are glad to notice that within recent years "the old order changeth, giving place to the new," and that members of our profession, who, by force of circumstances or natural inclination, have special experience of some of the items which go to make up our whole range of subjects, are beginning to publish for the benefit of their fellow-practitioners their views, methods, or experiences of the subject specialised by them. The little brochure of 105 pages, by Professor Hobday, now before us, deals with the subjects above mentioned from a practical point of view, and as he includes at the end of the discussion on each an appendix giving the results of a number of *consecutive* cases, one is thus enabled to form a true value of the risks and benefits of the two operations, neither of which present insurmountable difficulties for any average practitioner. There is no reason why he should

not attempt and even be successful in both. It must, however, be remembered that both of these operations are major ones, and as such require the greatest attention to all details. The book contains chapters on the preparation of the patient, methods of securing, anæsthetics, instruments, surgical anatomy, the operations, after-treatments, sequelæ, &c. It is well printed and bound, and contains thirty-four illustrations.

NOTES ON THE DUTIES OF VOLUNTEER MOUNTED TROOPS. By A. C. M'BARNET and G. H. GUILLUM SCOTT; together with a Chapter on Veterinary First Aid by Vet.-Lieut.-Col. J. A. NUNN, Barrister-at-Law. 3rd Edition. London: W. Clowes & Sons, Limited.

This little book of seventy-seven pages will be found most useful to all those belonging to Yeomanry or Mounted Infantry corps. It contains chapters on the daily routine of camp life, the general management of horses in stables and in camp, the regulations *re* the saddlery and equipment, the wearing of equipment for different orders and saluting, the duties of orderlies, marching and signals, together with the above-mentioned chapter on veterinary first aid. Altogether it is a *multum in parvo*, and the price is only one shilling.

On page 75 is a plan for the laying out of a camp for a mounted regiment. In it the sick lines and refuse heap are close together, an arrangement for which we know of no particular predilection. We feel sure the veterinary editor (all three of them are barristers-at-law) had nothing to do with this.

ARMY VETERINARY DEPARTMENT.

April 25.—Vet.-Lieutenant A. C. Wilson arrived from India on six months' leave of absence on medical certificate.

April 30.—Vet.-Lieutenant W. O. Dawson, Indian Civil Veterinary Department, Principal, Ajmere Veterinary College, arrived in England on three months' leave.

From *The London Gazette*, Friday, May 1.

War Office, Pall Mall, *May* 1.

Vet.-Major L. J. Blenkinsop, D.S.O., to be Vet.-Lieut.-Colonel, *vice* C. Clayton, retained Supernumerary to the Establishment under the provisions of Article 473, Royal Warrant 1900.

May 1.—Vet.-Captain W. Dunlop Smith reports his arrival in Dublin for duty with 21st Lancers.

May 4.—Vet.-Lieut.-Colonel C. Rutherfurd, C.M.G., reported his arrival from South Africa on completion of a tour of duty.

May 6.—Vet.-Lieutenant B. Glover, C.B., arrived from India on completion of a tour of service.

From *The London Gazette*, Friday, May 8.

War Office, Pall Mall, *May* 8.

Vet.-Lieutenant R. C. Cochrane is seconded for service under the Civil Administration of the Transvaal, under Article 77 (*h*) Royal Warrant, 1900.

IMPERIAL YEOMANRY.

D. S. Davidson, gent., to be Vet.-Lieutenant. West Somerset—Vet.-Captain G. H. Elder to be Vet.-Major.

Memorandum.—The grant of the temporary rank of Vet.-Lieutenant to W. M'Kie, gent., late Vet.-Lieutenant Imperial Yeomanry, whilst employed with the Remount Department, which was notified in *The Gazette* of August 1, 1902, is cancelled.

May 7.—Vet.-Captain A. England is posted for duty with the 1st Royal Dragoons at Shorncliffe.

May 7.—Vet.-Captain F. W. Wilson is posted to the 11th Hussars, Curragh, for duty.

May 11.—Vet.-Lieut.-Colonel Kay Lees, Inspecting Veterinary Officer Madras Army, reports his arrival in England on seven months' leave of absence on private affairs.

April 25.—Vet.-Lieutenant E. B. Bartlett is transferred from the Indian Establishment to Egypt, and left Bombay in P. and O. S.S. "Manilla" this day.

From *The London Gazette*, Friday, May 15.

War Office, Pall Mall, *May* 15.

The undermentioned civilian Vet.-Surgeons to be Vet.-Lieutenants, on augmentation:—F. Fail, F. A. S. Moore, W. Ludgate, R. A. Plunkett, W. A. Jelbort, J. Nicholas, S. F. G. Pallin, J. J. B. Tabley, H. Allen, E. S. Oliver, H. Greenfield, W. E. Schofield, J. I. Edgar, E. C. Webb, E. J. Wadley, J. R. Stevenson, W. W. R. Neale, A. Leaning, H. E. Gibbs, H. Kirby, R. C. Matthews.

May 7.—Vet.-Lieut.-Colonel B. J. Glover, C.B., to be P.V.O. 3rd Army Corps, Ireland; Vet.-Lieut.-Colonel L. J. Blenkinsop, D.S.O., to be Senior Veterinary Officer, Curragh.

May 21.—Vet.-Lieut.-Colonel F. Smith, C.M.G., P.V.O., South Africa, arrived in England on six months' leave of absence.

May 21.—Vet.-Lieut.-Colonel E. H. Hayleton, P.V.O. Bombay Army, reports his departure on the expiration of leave of absence.

EXTRACT FROM LINE OF COMMUNICATION ORDERS.

BY LIEUT.-COLONEL J. C. SWANN, COMMANDING BERBERA, BOHOTLE, LINES OF COMMUNICATION.

March 30th, 1903.

"OWING to the necessity of employing *transport* officers upon *purchasing* duties, and the consequent scarcity of transport officers, Captain Harris, A.V.D., is appointed to act as Base Transport Officer at Berbera, in addition to his other duties, and as a temporary measure, from March 18th, 1903, until relieved, subject to the confirmation of the G.O.C."

We publish the above, as it has to deal with the qualification of veterinary officers to hold army rank, and exercise authority over subordinates. Comment is unnecessary, although some military officials and the present Secretary of State for War deny that members of the veterinary profession are capable of doing anything more than attend the horses when they are sick, and combatants are required to buy and judge pace, endurance, and suitability for army purposes.

THE LATE HARRY OLVER, F.R.C.V.S.

DEATH OF Mr. HARRY OLVER.

We deeply regret to have to record that Mr. Harry Olver, F.R.C.V.S., died at his residence, Trescoe, Tamworth, on Tuesday, 19th May, after a very brief illness. The sad event has greatly grieved every one in the town and neighbourhood, for Mr. Olver was one of the best known citizens of the borough, and the feelings of sorrow have been much accentuated by the fact that he was stricken while anxiously and faithfully attending at the sick-bed of his only son, Mr. W. Tempest Olver. The strain upon Mr. Olver was severe, and at a time when his son's life hung in the balance, on Friday in last week, Mr. Olver broke down. The attack of pneumonia, from which he was found to be suffering, was aggravated by complications in connection with the heart, and the latter ultimately caused death on the Tuesday.

The late Mr. Olver was a native of Trescoe, near Bodmin, and was born in 1850. His father was a large farmer there, and well known throughout Cornwall. A little over thirty years ago Mr. Olver became assistant to a veterinary surgeon in Burton-on-Trent, and took up his residence at Edingale. Subsequently he went to Wiggington, and later on to Tamworth, where he commenced business on his own account. His great abilities as a veterinary surgeon secured him a wide practice, and his advice and skill were sought for from all parts of the Midlands. Several noted studs, including the Duke of Portland's and Mr. J. Gretton's, were regularly under his care. He acted as veterinary inspector under the Board of Agriculture for the Tamworth district. He was frequently a judge at the Royal and the County Agricultural Shows, and he has also officiated as an honorary veterinary surgeon at the London Hackney and Shire Horse Exhibitions in London. His devotion to his profession and his high standing among his confrêres gained for him the position of an Examiner of the Royal College of Veterinary Surgeons, of which institution he was a Fellow, and it is a sad coincidence that he had arranged to be in Edinburgh to conduct an examination that was due to be held almost on the day of his death.

From his early training and his professional associations Mr. Olver took a keen interest in the higher forms of sport. He was a close follower of both the South Staffordshire and the Atherstone Hounds, and usually attended and acted as one of the officials in connection with the point-to-point races organised by these hunts.

For several years from 1887 Mr. Olver found time, despite the professional calls upon him, to take an active part in the public life of Tamworth, and he discharged his duties with rare intelligence, energy, and diligence. He first entered the Council in 1887, and so rapidly did he rise in the esteem of his colleagues that in the following year he was unanimously chosen as Mayor, and when his year of office expired he was re-elected for another term. During his mayoralty a very large amount of public work was carried out.

On his retirement from the mayoralty there was a general feeling that his work for the town ought to be recognised, and accordingly on December 9, 1890, Mr. Olver was entertained to a banquet in the Assembly Rooms. There was a large and influential company, presided over by Mr. R. Nevill, who succeeded Mr. Olver in the mayoral chair. In giving the toast of the guest of the evening, Mr. Nevill said that no Mayor of Tamworth had ever had such a splendid record as Mr. Olver, and he warmly compli-

mented him, in the name of the town; on his sagacious discharge of his judicial duties as chief magistrate. Mr. Olver, with the modesty that was one of his characteristics, replied that he had simply done his duty.

Mr. Olver occasionally attended functions of a social character in connection with various organisations. He had the gift of genial and attractive speech, which was entirely in consonance with his sunny, kindly, and courteous disposition. He was a member of the Marmion Chapter of Royal Arch Masons, and a Past Provincial G.R. of Staffordshire. He was, too, a member of the Birmingham and Midland Cornish Society. Indeed, he was well known throughout the Midlands, and was a *persona grata* in all circles, and particularly among farmers and agriculturists generally, and county residents. His death, in the prime of life, has been a great shock to every one who knew him.

An old friend of Mr. Olver's, a distinguished Fellow of the Royal College of Veterinary Surgeons, writes to us as follows:—"I first met Harry Olver on 30th September 1868, at the entrance gate of the London College, he following me in to sign the matriculation book; and then commenced a friendship which has extended over thirty-five years without one single ripple. He was as a student the steady, exemplary fellow that he was throughout all his life—never absent from his classes, hard worker, and always in the front rank. He qualified on 20th April 1870, in company with William Augustus Taylor, Vet.-Major J. W. Evans, and myself. Throughout the Midlands he was generally beloved, and his friendship was most highly valued."

For ourselves, we must add that Mr. Olver was an ideal examiner,—calm, judicious, thorough. He knew his subject in all its details, and understood the difficulties which beset the young student struggling to master its complications and perplexities. He had a wonderful amount of tact in dealing with students, and could distinguish between the confident youth, superficially equipped, and the timid lad whose nervous excitement prevented him from displaying the knowledge which he really possessed. No meritorious student ever had cause to fear Mr. Olver; many had cause to bless him for the kindly skill with which he drew out their capabilities; some may have thanked him for exposing their immaturity. He never kept a good man back from the profession; he was always the first to recognise talent in whatever form it showed itself.

Communications, Books, Journals, &c., Received.

Agricultural Journal (Cape of Good Hope); Berliner Thierärztliche Wochenschrift; La Clinica Veterinaria (Milan); Deutsche Thierärztliche Wochenschrift; Tannoform in Veterinary Medicine (March); The Sanitary Journal; Scottish Medical and Surgical Journal; Veterinary Record; La Riforma Veterinaria; Le Mois Scientifique (Paris); L'Echo Vétérinaire (Liège); Annales de Médecine Vétérinaire (Brussels); Johns Hopkins Hospital Reports; Journal of Comparative Medicine and Veterinary Archives; Recueil de Médecine Vétérinaire; Gazette Médicale de Paris; Modern Medicine; Johns Hopkins Hospital Bulletin; Il Veterinario di Campagna (Moncalieri); Le Bulletin Vétérinaire (Orleans); Revista de Medicina Veterinaria (Bucarist); La Revista Veterinaria (Buenos Aires); Zeitschrift für Fleisch-und Milchhygiene (Berlin); Buletinul Societatii de Sciinte diu Bucuresci-Romania; The Meat Trades Journal; The Dental Record.

Board of Agriculture Reports of Proceedings under the Diseases of Animals Acts, &c. &c. Pressure of space prevents us reviewing this and other books this month, also the insertion of various interesting papers.